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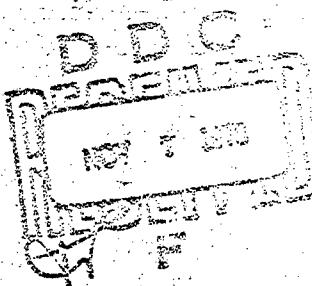
LEVEL 1

COST EFFECTIVENESS STUDY OF
WASTEWATER MANAGEMENT SYSTEMS FOR
SELECTED U.S. COAST GUARD VESSELS

Volume VI - Mission Profiles of Selected U.S. Coast Guard Vessels

Sidney Orbach

BRADFORD NATIONAL CORPORATION
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New York, N.Y. 10019



February 1977

FINAL REPORT

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16. Abstract The operations of six U. S. Coast Guard vessels within and beyond restricted waters (within 3 miles from shore or on inland bodies of water) were analyzed in order to determine parameters which affect the design and operating costs of shipboard wastewater management systems.			
The maximum holding time (i. e., the longest continuous time within restricted waters) is a design parameter which affects equipment sizing. The system utilization factor and number of mode changeover cycles (from primary to overboard or pierside) affect operating costs. The latter two parameters were derived respectively from an analysis of the fraction of time the vessel is within restricted waters and the number of crossings of the three-mile limit as well as the number of shore dockings.			
Data for the analysis was obtained from visits to the vessels and examination of the logs. From a study of the recorded vessel operations and activities (buoys tended, fisheries patrol, search and rescue, shore dockings, etc.), reference to navigation maps and the assistance of vessel personnel, every sortie was analyzed in terms of its relevant characteristics namely, holding times, times beyond restricted waters, number of 3-mile crossings, and shore dockings. The lists of sortie holding times and times beyond restricted waters constituted basic data which was subjected to further computer-aided statistical analyses, including confidence limits on the maximum holding time for each vessel.			
Prior to data collection and analysis, pertinent guidelines and assumptions which have a significant effect on the analysis were established. These included the assumptions that waste receiving facilities would be available at the vessels' home port and at a yard only, and that as soon as the vessel crosses the 3-mile limit, the wastewater management system is changed to operate in the overboard mode.			
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**U.S. Dept. of Transportation
U.S. Coast Guard
Office of Research & Development
Washington, D.C. 20590**

Contract No. DOT-CG-52180-A

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This study was conducted under the technical direction of Mr. Thomas S. Scarano of the Office of Research and Development, U.S. Coast Guard. His suggestions for the goals of the study profoundly influenced its course and resulted in a generalization of the mission profile data collection and analysis procedures.

Mr. Scarano and Lt. Ed Magsig of the Office of Engineering, together with Mr. James A. White, of the Office of Research and Development provided valuable assistance in the formulation of the assumptions and guidelines governing this analysis.

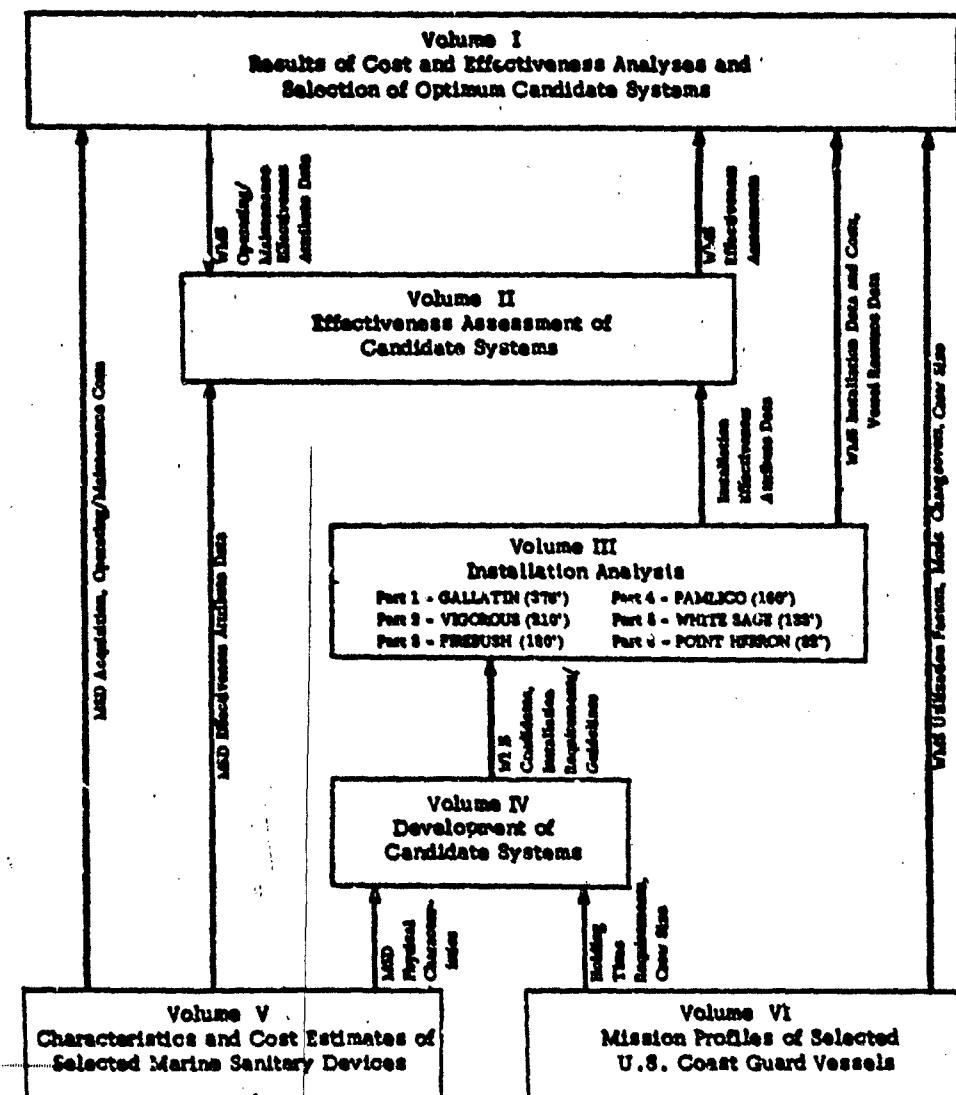
The cooperation of the officers of U.S. Coast Guard Cutters GALLATIN (WHEC - 721), VIGOROUS (WHEC - 627), FIREBUSH (WLB - 393), WHITE SAGE (WLM - 544), POINT HERRON (WPB - 82318), PAMLICO (WLIC - 800), CLAMP (WLIC - 75306), and SHADBUSH (WLI - 74287) in making available the ship logs and assisting in the interpretation of the log entries to develop the necessary data for the mission profile analysis is greatly appreciated.

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PREFACE

The relationship among the volumes of the report is depicted below.

This relationship does not convey all the information contained within each volume.



SUMMARY OF MISSION PROFILE CHARACTERISTICS

VESSEL	ANNUAL TIME EXPENDITURE IN POINTS		ANNUAL NUMBER OF HOMES AND HOME SPOTS IN TRADE		ANNUAL TIME UNDER WAY		ANNUAL TIME IN TRADE		TIME WITHIN 6-1 MILE LIMIT AND/OR IN NON-HOME PORT (Excluding Ports)		TIME SPENT HOLDING TIME		TIME SPENT IN RESTRICTED WATERS			
	HOME	NON-HOME	HOME	NON-HOME	HOME	NON-HOME	HOME	NON-HOME	HOME	NON-HOME	HOME	NON-HOME	HOME	NON-HOME		
GALLAGH (378)	4556.5	532.0	748.5	6.0	39	50	364.0	9.0	2571.9	26.3	205.0	2.0	8.0	972.5	11.0	
VIGOROUS (216)	4920.0	545.2	334.0	4.1	32	24	202.0	11.0	2584.8	20.6	152.2	1.7	6.0	485.2	5.6	
FIREBIRD (180)	5352.7	72.6	377.2	4.3	305	20	246.0	8.0	1252.0	10.3	66.7	9.0	60.7	1237.9	14.1	
WHITE SAGE (133)	7519.4	35.0	289.7	3.2	161	21	216.0	2.5	743.9	8.5	24	692.2	7.9	936.0	972.9	11.1
POINT REVENGE (627)	7330.4	48.4	91.5	1.0	91	2	480.0	5.5	369.0	4.1	92	70.5	8.0	182.7	162.0	1.0
PAMBACO (166)	5227.3	71.6	0	0	65	0	0	0	2486.7	20.4	0	2486.7	20.4	180	2471.1	28.2
New Comer (6)	5024.7	68.9	0	0	65	0	0	0	2735.3	21.1	0	2735.3	21.1	0	2710.1	31.0
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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	What You Know	Multiply by	To Find	
				LENGTH
	inches	.025	centimeters	
	feet	.30	centimeters	
	yards	.93	centimeters	
	miles	1.6	kilometers	
				AREA
	square inches	.0065	square centimeters	
	square feet	.025	square meters	
	square yards	.73	square meters	
	square miles	2.5	square kilometers	
	acres	.64	hectares	
				MASS (weight)
	ounces	.028	grams	
	grams	.035	grams	
	kilograms	.93	grams	
	other units (2000 lb)	.45	tonnes	
				VOLUME
	teaspoons	.05	milliliters	
	tablespoons	.15	milliliters	
	fluid ounces	.30	milliliters	
	cups	0.24	liters	
	pints	0.47	liters	
	quarts	0.95	liters	
	gallons	3.8	liters	
	cubic feet	0.03	cubic meters	
	cubic yards	0.70	cubic meters	
				TEMPERATURE (insect)
	Fahrenheit	5/9 (insect)	Celcius	
	temperature	substracting 32)	temperature	

1 in = 2.54 centimeters. For other insect conversions and more data and tables, see FAO-Mec. Publ. 206, Units of Weights and Measures, Price 12s, SD Catalog No. C11C-294.

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INTRODUCTION

OBJECTIVES

There are two essential reasons for analyzing vessel mission profiles in the context of this cost effectiveness study of wastewater management systems (WMS), namely:

- Determination of WMS design parameters. This information is derived from an analysis of the vessel holding time requirements, i.e., the maximum continuous time that the vessel will not be permitted to discharge wastewaters (either overboard or to a shoreside receiving facility). The maximum holding time associated with a vessel is an important WMS design parameter which is used (in conjunction with other considerations) to determine the following:
 - .. The sizing of candidate WMS equipments (holding tanks, pumps, etc.)
 - .. The equipment configuration of candidate WMS, i.e., the number of units of each type required
- Determination of WMS utilization characteristics. This information is used in estimating WMS operating and maintenance costs as a function of vessel. Specifically, the WMS utilization characteristics of interest are as follows:
 - .. WMS utilization factors, i.e., the percentage of total annual time that the WMS subsystems are in use
 - .. The number of WMS mode changeover cycles per year (primary to overboard and pierside to primary)
 - .. Vessel yard availability, to the extent that they affect WMS utilization

SCOPE OF MISSION PROFILE STUDY

This mission profile study is limited to the specific vessels and operational conditions indicated in Table 1. It is assumed that the data obtained is typical for the vessels operating from the home ports indicated and its associated geographical region. However, no attempt is made to extrapolate results to other vessels or operational conditions. Specifically, it should not be assumed that the results of this mission profile study are applicable under the following circumstances:

- Other classes of vessels
- Other vessels than those analyzed in the same class
- The vessels analyzed when operating in different geographical regions than those for which data was collected

Further data collection and statistical analysis would be required in order to generalize the results of this study for the above or other circumstances.

ASSUMPTIONS

Several assumptions and guidelines were used in the course of this vessel mission profile study. The pertinent assumptions which affected the manner in which data was collected and analyzed as well as the results obtained are discussed below.

Restricted Waters

For purposes of this study, restricted waters are defined as the region of water within three (3) miles of any shoreline of the continental United States, as well as all inland waters (e.g., lakes, rivers, bays, etc.). It is noted that in certain geographical regions (e.g., those involving islands close to shore or close to one another, shoreline contours which have land projections close to one another, etc.) the determination of the 3-mile limit can be quite involved. Under such circumstances, since it is not practical for a navigator to continuously check for the presence of

Table 1
VESSELS INCLUDED IN MISSION PROFILE STUDY

VESSEL	CLASS	TYPE	CREW SIZE	HOME PORT	MISSION PROFILE DATA	
					TIME INTERVAL Studied	Source of Data
GALLATIN (37)	WHEC-721 Hamilton (37) Class	High Endurance Cutter	152	Governor's Island, New York	<u>12 Months</u> 7/1/74 - 6/30/75	Ship's Log
VIGOROUS (32)	WTMEC-627 Resolute (210') B Class	Medium Endurance Cutter	60	New London, Conn.	<u>12 Months</u> 8/1/74 - 7/31/75	Summary Log
FROGMOUTH (118)	WTB-393 Seamoc (180') C Class	Buoy Tender (Seagating)	50	Governor's Island, New York	<u>12 Months</u> 8/1/74 - 7/31/75	Summary Log
PALMICO (110)	WTLC-800 New Construction Based on Data From	Buoy and Construction Tender (Inland)	12	New Contractors (Intended for Operations in Depot Corps, Texas)	represented by data from SHADBUCK and CLAMP	
SHADBUCK (74)	WTLP-74287 Clematis (74) Class	Buoy Tender (Inland)	6	New Orleans, La. (Transferred to Galveston, Texas)	<u>1 Month</u> 6/1/74 - 6/30/75	Summary Log
CLAMP (75)	WTLC - 75286 Clamp (75) Class	Construction Tender (Inland)	9	Galveston, Texas (Transferred to New Orleans, La.)	<u>3 Months</u> 8/22/75 - 10/31/75	Summary Log
WHITE RAGG (129)	WTLM-544 White Summrac (129) Class	Buoy Tender (Coastal)	21	Woods Hole, Mass.	<u>8 Months</u> 8/1/74 - 7/31/75	Ship's Log
POINT HENRY (82)	WTIP-82215 Polar (82) C Class	Patrol Boat (Small)	8	Say Shore, New York (Hudson River)	<u>15 Months</u> 8/1/73 - 7/31/74	Summary Log

the vessel within restricted waters during vessel operations, estimates have to be made.

Waste Receiving Facilities

Wastewater receiving facilities are assumed to be available at the vessel's home port and at a yard only. Waste off-loading facilities are assumed to be unavailable for the vessel at all other non-home ports regardless of type, i.e., Coast Guard, Navy, municipal, etc.

All calculations are based on the assumption that when the vessel is in its home port or at a yard, it is connected to the waste receiving facility but when it is in any other non-home port (or within restricted waters) it cannot discharge wastewaters and therefore must treat or hold them. It is noted that pierside waste receiving facilities were assumed to be available at a vessel's home port even though they were not present or operational during the time of the study (e.g., Governor's Island, New York).

WMS Operation Within and Beyond Restricted Waters

All results are computed on the basis of the following assumptions with respect to WMS operation:

- Operation of WMS subsystems which are necessary to avoid discharge of wastewaters (i.e., the primary mode) is initiated as soon as the vessel enters restricted waters or leaves its home port and continues until the vessel either leaves restricted waters or arrives at its own home port or at a yard. WMS operation in the primary mode continues if the vessel is at any non-home port except a yard.
- As soon as the vessel arrives at its own home port or at a yard, it is connected to a pierside waste receiving facility and WMS subsystem operation is changed to the pierside discharge mode.

WMS operation in the overboard discharge mode is initiated as soon as the vessel leaves restricted waters and continues until it reenters restricted waters.

It is noted that in practice it may not be practical to operate a WMS in strict conformance to the above assumptions. As an example, when a vessel leaves and then reenters restricted waters after a short time duration, it may not be worthwhile to change the WMS operation to the overboard mode and then back to the primary mode. However, since any choice of a time interval which is considered to be "short enough" to warrant forgoing such mode changeovers is argumentative, no attempt was made to choose such a time interval for vessel operation beyond restricted waters.

It is also noted that in practice vessel operations may be modified slightly from the manner indicated by the mission profile data in order to facilitate WMS operation. As an example, the mission profile data may indicate that a vessel has left and reentered restricted waters after a very short time interval. However, if the vessel were equipped with a WMS which has a holding tank and the holding tank was full when the vessel left restricted waters, the vessel may remain beyond restricted waters for a longer period of time than indicated by mission profile data in order to facilitate emptying the holding tank. As another example, if a holding tank becomes full when a vessel is within restricted waters (or at a non-home port other than a yard), it may transit out of the restricted waters sooner than indicated by the mission profile data in order to pump out the holding tank.

Validity, Applicability and Generality of the Data

As discussed earlier (see Scope) this mission profile study is limited to the specific vessels included in this study and operating in the geographical area for which data was obtained.

The data and the results obtained from an analysis of this data are based on operational information from vessels which currently are not outfitted with the candidate wastewater management systems included in this study. Reference has been made above to the possibility that if a vessel were equipped with certain types of WMS, vessel operations might be modified to some extent in order to accommodate WMS operational requirements or to make such operations more convenient.

In addition to the above two cautions and limitations regarding the applicability and generality of the data and the results, a question arises with respect to validity of the data taken over a limited period of time to represent and characterize that vessel for all time. All calculations and results of this study are based on the assumption that the data for a given vessel obtained is valid and representative and hence characterize the vessel.

Vessel Holding Time Requirements

As previously noted (see Objectives), the holding time requirement for a vessel is an important WMS design parameter. A basic question arises in connection with the choice of holding time goals for each vessel, since the data indicates a wide distribution of holding times ranging, in some vessels, from relatively small numbers to relatively very large numbers.

For purposes of this study it was decided to base the holding time goal for a given vessel on the largest holding time encountered for that vessel, regardless of its prevalence in the data obtained, i.e., even if the maximum holding time occurred only once and is considerably higher than all other holding times (and in ordinary statistical analyses might be considered an outlier). It is noted that for some of the vessels included in this study, the maximum holding time is considerably out of range in comparison with the rest of the data. Table 2 shows the relation between the maximum holding time, the next smaller holding time and the percentage of all holding times excluding the maximum (i.e., the percentage of all holding times smaller than or equal to the next to the largest holding time).

Table 2
RELATION BETWEEN MAXIMUM AND ALL OTHER HOLDING TIMES

VESSEL	MAXIMUM HOLDING TIME (Hours)	ALL OTHER HOLDING TIMES	
		Next Smaller Holding Time (Hours)	% of All Holding Times Excluding the Maximum
GALLATIN (378')	97.3	88.0	98.21
VIGOROUS (210')	172.0	72.0	96.77
FIREBUSH (180')	277.9	54.0	99.26
PAMILICO (160')* New Construction	456.0**	228.0	97.78
WHITE SAGE (133')	65.3	62.0	96.88
POINT HERRON (82')	99.0	21.5	99.12

* Based on data from SHADBUSH (74') and CLAMP(75')

** Maximum holding time used for WMS design purposes is 501 hours, an increase of 10% to reflect anticipated longer holding time requirements as a result of more available space for stocking supplies.

The decision to use the maximum holding time for a given vessel as the holding time requirement for that vessel (which was then used as a WMS design parameter) is based on the following two considerations:

- There is no provision in the law for deliberate violation of emission standards even a small percentage of the time. As a result, it is not reasonable to develop a WMS based on a design parameter which provides, with a priori knowledge for the violation of emission standards, even though such violations will occur on very rare occasions. This is to be distinguished from possible violations of emission standards due to either system failures or operator errors, since these have to be considered accidental rather than deliberate violations of emission standards.
- Even if the above consideration was ignored, any choice for a vessel holding time goal based on any given percentile of all holding times other than 100% (which corresponds to the maximum holding time) is an argumentative decision which cannot be readily justified.

APPROACH

The procedures used during the course of this vessel mission profile study for data collection and analysis are discussed below.

Data Acquisition and Reduction

Data for this mission profile study was obtained from visits to the vessels included in the study. The source of data was either the ship's log or the summary log (see Table 1).. Assistance was obtained from vessel personnel in interpreting the data and making estimates when necessary. The basic data was recorded on a form similar to the one in the left hand side of Table 3. Data was recorded on a daily basis for each month.

Table 3
DETAILED VESSEL MISSION PROFILE DATA

Vessel

४८

Dockings at a yard were indicated by footnotes and included in the home port columns, whereas the time spent at a yard were included in the non-home port column. This convention was adopted in order to conform to the assumptions regarding the availability of shoreside waste receiving facilities and in order to provide vessel mission profile parameters which can be readily used for estimating WMS operating and maintenance costs (i.e., WMS utilization factors and number of mode changeover cycles).

The information for the number of hours underway which were spent within the three (3) mile limit and the number of 3-mile crossings was obtained, with the assistance of vessel personnel, from the log entries of vessel activities (buoys tended, fisheries patrol, search and rescue, etc.) and reference to navigation maps. The time spent within restricted waters was often a composite figure which included two or more individual time intervals (i.e., transits in and out of restricted waters). Such times within restricted waters were split into its component time intervals on the basis of estimates and designated by footnotes.

The above information was then used to determine the sortie characteristics (see Definitions and following discussion) in the right hand side of the Table 3 and to prepare a detailed sketch of each sorties. This information was also used to prepare summaries of holding times and times beyond restricted waters, listed by month. These lists of holding times and times beyond restricted waters were used as the input data for the statistical caculations. A summary of vessel mission profile characteristics was also prepared from the data on the form in Table 3 for each vessel.

Sortie Characteristics

In order to develop the type of information necessary to formulate WMS design parameters and to estimate operating/maintenance cost, it is necessary to study sortie characteristics in some detail. Specifically, the sortie characteristics which are of interest are as follows:

Holding times, including:

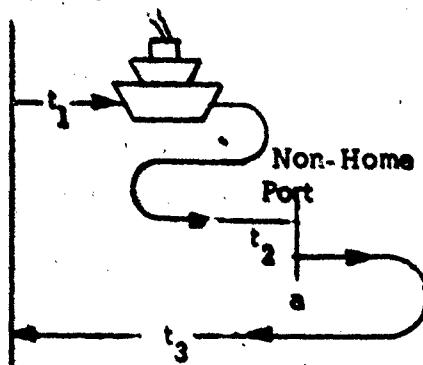
- .. The maximum holding time for each sortie.
- .. The other sortie holding times.
- . Times beyond restricted waters for each sortie.
- . The number of 3-mile limit crossings.
- . The number of shore dockings at home port, non-home ports and yards.
- . The time spent at home port, non-home ports and at yards.

To facilitate the development of the necessary type of data, a sketch was prepared for each sortie. In addition, an attempt was made to group all sorties into a few general types. It was found that although each sortie is unique and therefore no one set of sortie types can completely characterize all sorties, it was possible to develop four sortie types with variable parameters (i.e., the number of 3-mile limit crossings, the number of pier dockings, etc.) to categorize all sorties encountered. On the mission profile data form in Table 3, the first column of the right hand portion of the form is used to designate the limits (i.e., beginning and end) of each sortie, the sortie type and the parameters associated with each sortie. The other three columns are used for entering, for each sortie, the maximum holding time, the other sortie holding times and the sortie times beyond restricted waters. It is noted that the sortie holding times and times beyond restricted waters are computed subject to the governing assumptions (see Assumptions). The four types of sorties used to categorize the vessel operations and their associated parameters are presented below.

TYPE I

Vessel departs from home port, may dock at non-home port, may (within restricted waters) spend time at non-home port, departs from non-home port, performs all of its duties within restricted waters (inland waters and/or within 3-mile limit of established zone*) and return to home port, without having crossed the 3-mile limit.

Home Port



3-Mile Limit

Maximum continuous Holding Time (Hrs)

$$T_{\max} = t_1 + t_2 + t_3$$

* Restricted zone as indicated on navigation maps.

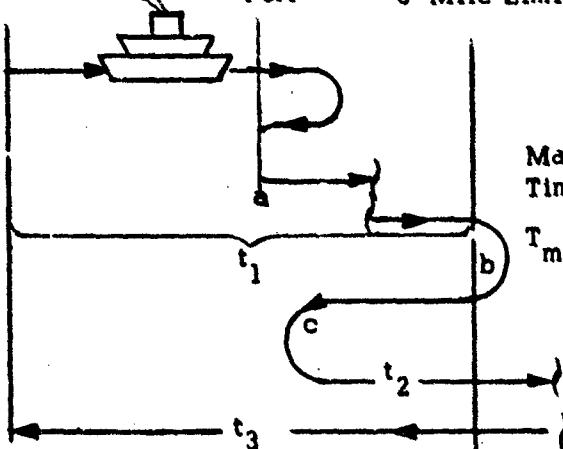
TYPE II

Vessel departs from home port, may dock at non-home port, may spend time at non-home port, departs from non-home port, performs some of its duties within 3-mile limit (it may repeat this process several times), crosses the 3-mile limit, performs additional duties (this may occur several times), and return to home port.

Home Port

Non-Home Port

3-Mile Limit

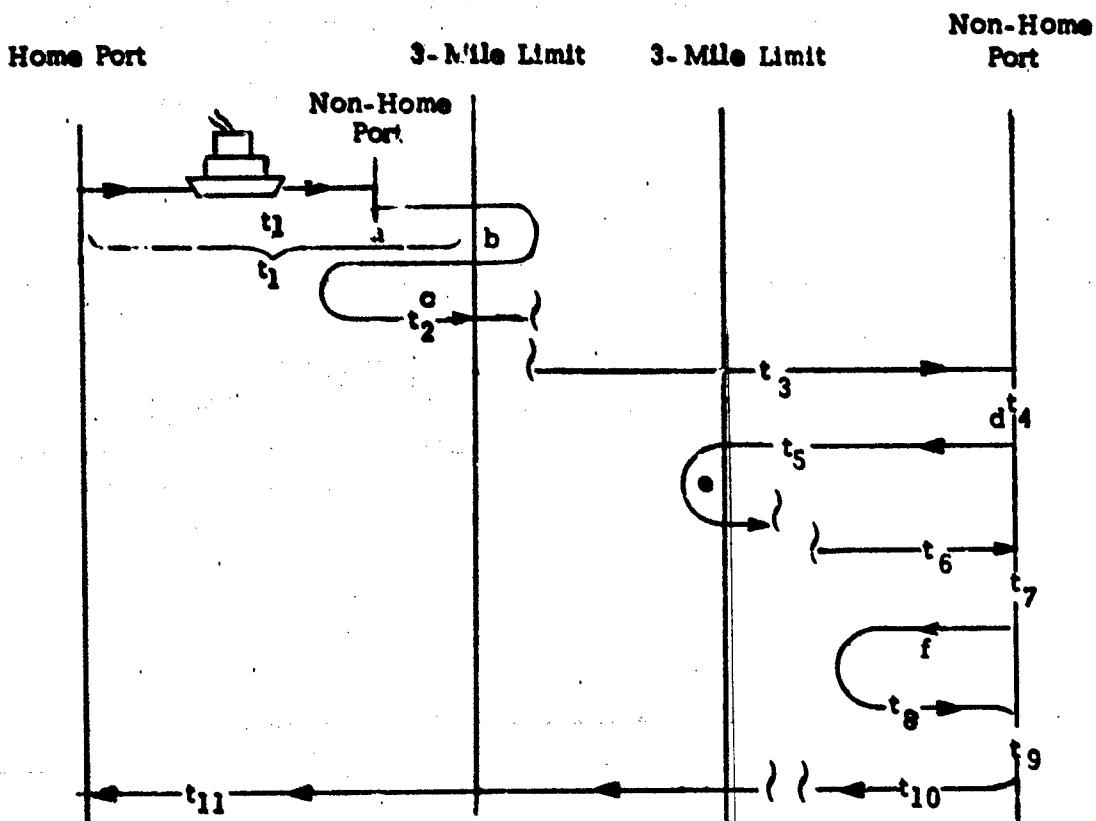


Maximum continuous Holding Time (Hrs)

$$T_{\max} = \text{Largest of } t_1 \text{ or } t_2 \text{ or } t_3$$

TYPE III

Vessel departs from home port, may dock at non-home port, may spend time at non-home port, departs non-home port, performs its duties, crosses 3-mile limit (possibly several times), transits to another non-home port crossing its 3-mile limit, docks at non-home port, spends time at non-home port, departs non-home port, performs its duties, possibly crosses 3-mile limit several times, returns to non-home port, spends time at non-home port, departs from non-home port, crosses 3-mile limit, performs its duties and return to home port.

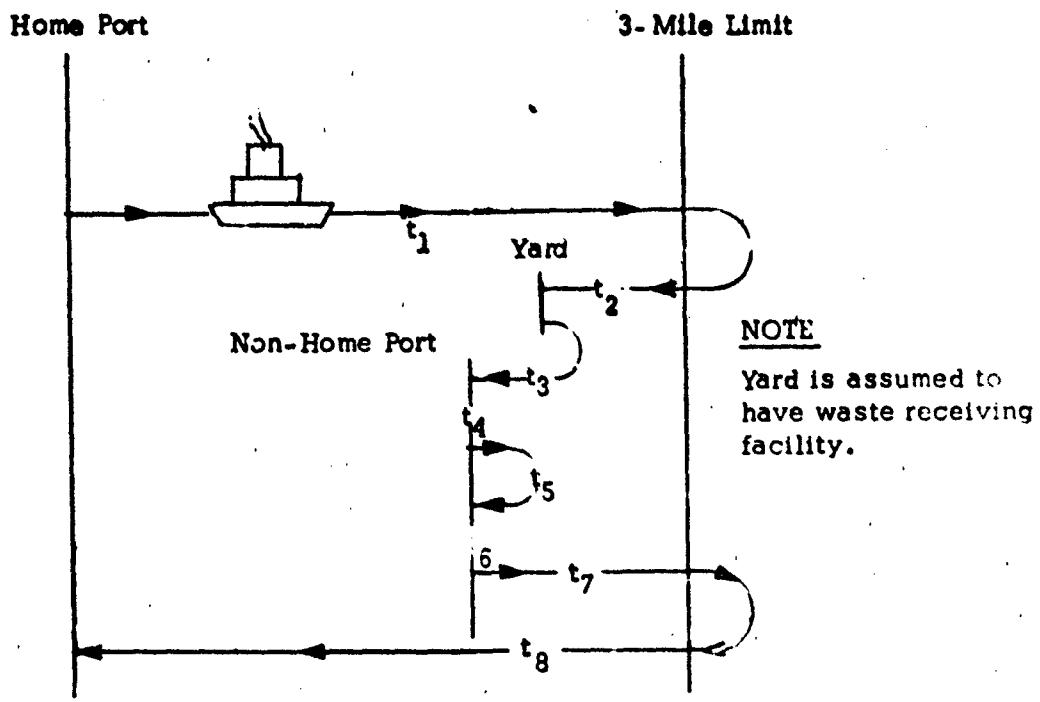


Maximum continuous Holding Time (Hrs)

$$T_{\max} = \text{Largest of } t_1 \text{ or } t_2 \text{ or } t_{11} \text{ or } (t_3 + t_4 + t_5 + \dots) \text{ or } (t_6 + t_7 + t_8 + t_9 + t_{10} + \dots)$$

TYPE IV

Vessel departs from home port, performs its duties, crosses 3-mile limit, performs more duties, crosses 3-mile limit and docks at yard. Vessel is overhauled or refurbished at yard, departs yard, transits to non-home port, docks at non-home port, spends time at non-home port, departs non-home port, performs its duties, returns to non-home port (performs this sequence several times), crosses 3-mile limit and returns to home port.



Maximum continuous Holding Time (Hrs)

$$T_{\max} = \text{Largest of } t_1 \text{ or } t_2 \text{ or } t_8 \text{ or } (t_3 + t_4 + t_5 + t_6 + t_7).$$

Annualization of Data and Results

As indicated in Table 1, the data collected for some of the vessels covered periods which were either less or more than a year. Since many of the desired results are required on an annual basis, it was necessary to prorate the data in order to obtain annualized results. The prorating procedure for the time spent by the vessel at various location is based on the actual number of hours in the given period covered by the data instead of the number of months in the period, due to the non-uniformity of the months. No attempt was made to prorate the time spent in a yard. This decision was adopted because the time a vessel spends in a yard is either scheduled in advance or is due to random failures (i.e., vessel refurbishment), for which there is no well defined basis for a prorating scheme. A problem arose in the case of the POINT HERRON (82') in which this procedure could not be strictly adhered to because two refurbishments of significantly different durations (384 and 216 hours) occurred during the time interval over which data was collected. The procedure used in this case was to obtain a weighted average yard time (480 hours) based on prorating the sum of the two refurbishment times (600 hours) over the time interval (15 months) over which data was taken (i.e., multiplying 600 by 12/15). The weighted difference of 120 hours was added to the home port figure. Annualization of the number of dockings and the number of 3-mile limit crossings was obtained by prorating on the basis of the number of months in the time interval over which data was collected.

The details of the calculations for annualizing the results for the WHITE SAGE (133'), the POINT HERRON (82') and the PAMLICO (160') are presented below.

WHITE SAGE (133')

8 months of data over the period 8/1/74-7/31/75 (for months 8, 10, 12/75 and 2, 4, 5, 6, 7/75)

8 Months → 5,832 Hours (243 Days x 24 Hours/Day)
- 216 Hours (Refurbishment)
5,616 Hours

One Year → 8,760 Hours (365 Days x 24 Hours/Day)
- 216 Hours (Refurbishment)
8,544 Hours

Use $\frac{8,544}{5,616}$ for Annualization

Results

Vessel Location	Totals for 8-Month Period (Hours)	Annualized Totals (Hours)
In Home Port	4,942.5	7,519.4
In Non-Home Port	184.5	280.7
Underway	489.0	743.9
In Yard (Refurbishment)	216.0	216.0
Sum	5,832.0	8,760.0

POINT HERRON (82')

15 months of data over period 5/1/73-7/31/74

Yard time (Refurbishment) = $384 + 216 = 600$ Hours

Yard time prorated for year = $60 \times \frac{12}{15} = 480$ Hours

(Balance of 120 hours added to home port time)

15 Months → 10,968 Hours (457 Days x 24 Hrs./Day)
 $\underline{- 480 \text{ Hours Refurbishment}}$
 10,488 Hours

One Year → 8,760 Hours (365 Days x 24 Hrs./Day)
 $\underline{- 480 \text{ Hours}}$
 8,280 Hours

∴ Use $\frac{8,280}{10,488}$ for Annualization

Results

Vessel Location	Totals for 15-Month Period (Hours)	Annualized Totals (Hours)
In Home Port	$9,789.5 + 120 = 9,918.5$	7,830.4
In Non-Home Port	116.0	91.6
Underway	453.5	358.0
In Yard (Refurbishment)	600.0	480.0
Sum	10,488.0	8,760.0

PAMLICO (160')

Based on data from SHADBUSH (74') and CLAMP (75')

17 Months of data over period 6/1/74-10/31/75

I/cr SHADBUSH (74') - 15 Months 6/1/74-8/21/75

For CLAMP (75') - 2 Months 8/22/75-10/31/75

17 Months → 12,432 Hours (518 Days x 24 Hrs./Day)

12 Months → 8,760 Hours (365 Days x 24 Hrs./Day)

∴ Use $\frac{8,760}{12,432}$ for Annualization

Results

Vessel Location	Totals for 17 Months (Hours)	Annualized Totals (Hours)
In Home Port	8,903.0	6,273.3
Underway	3,529.0	2,486.7
Sum	12,432.0	8,760.0

Since the plans for the PAMLICO (160') new construction vessel indicate more available space for stocking supplies than the vessels for which data were obtained, the underway time for this vessel was increased by 10% (to 2,735.3 hours), thus decreasing the time in home port by 10% (to 6,024.2 hours). These vessels operate primarily in inland waters and therefore no instances of visits to non-home ports were recorded. No visits to a yard occurred during the time interval over which data was taken.

Statistical Analysis of Data

The statistical analyses were performed with the aid of a computer, utilizing statistical analysis programs which were accessed through a terminal interconnected by telephone lines to an IBM 370 computer operating in a time sharing mode. The summaries of holding times and times beyond restricted waters, listed by month for each vessel, were used as the basic input data files for statistical analyses. The following computer printouts were obtained:

- Frequency tables for holding times and times beyond restricted waters. The frequency tables provide the following types of information:
 - .. The unique time intervals (listed in ascending order).
 - .. The count of the number of occurrences of each unique time interval.
 - .. The relative frequency (% of total) of each unique time interval.
 - .. The cumulative count of all time intervals which are equal to or less than each unique time interval (in ascending order).
 - .. The cumulative relative frequency (cumulative % of total) of all time intervals equal to or less than each unique time interval (in ascending order).

- Histograms for holding times and times beyond restricted waters (based on ten cells and a convenient cell size).
- Cumulative distributions for holding times and times beyond restricted waters.
- Confidence limits on the maximum holding time for each vessel. Lower confidence limits for levels of 50, 75, 90, 95, and 99% were obtained. The output lists the lower and upper confidence bounds which are the smallest and largest percentage of all holding times that are expected to be smaller than the maximum holding time on a long-run basis. Since the maximum holding time was used as the lower limit for this calculation, 100% of the data are below this value and hence the upper confidence bound is 100%. This binomial confidence limit calculation is non-parametric, i.e., good for any distribution.

DEFINITIONS

The definitions of certain terms used in conjunction with this vessel mission profile study are given below.

Bravo Status

The time allowed for a vessel to get underway.

Charlie Status

The vessel is tied up for maintenance, usually at its own home port.

Holding Times

The continuous time intervals during which a vessel is in restricted waters and/or in any non-home port, other than a yard. The maximum Holding Time for a given vessel is the largest holding time encountered during the time period over which data was taken. During holding time intervals, wastewaters may not be discharged overboard and therefore have to undergo Treatment/Disposal by the vessel WMS (i.e., it must operate in the primary mode).

Refurbishment

Unscheduled vessel repairs which cannot be made at a vessel's home port and hence are made at a yard.

Scheduled Yard Availability

Time set aside for vessel maintenance and overhaul at a yard.

Sortie

The various vessel movements, i.e., the transits in and out of restricted waters, arrivals at and departures from ports, etc., associated with the normal operations of a vessel. For purposes of this study, a sortie is initiated when a vessel leaves its own home port or a yard (i.e., when it is disconnected from a shore waste receiving facility) and ends when the vessel arrives at its own home port or at a yard (i.e., when it is connected to a shore waste receiving facility).

Times Beyond Restricted Waters

The continuous time intervals during which a vessel is beyond restricted waters. When a vessel is beyond restricted waters, it may discharge wastewaters overboard (i.e., the WMS may operate in the overboard discharge mode).

GALLATIN (378')

Vessel Characteristic	Data
Class	WHEC - 721 Hamilton (378') Class
Type	High Endurance Cutter
Crew Size	152
Home Port	Governor's Island, New York
Mission Profile Data Source and Time Interval	From Ship's Log 12 Months 7/1/74-6/30/75

SUMMARY OF MISSION PROFILE CHARACTERISTICS

Vessel GALLATIN (378')

(One Year Average - July 1974-June 1975)

% of time in home port (4556.5 hours) -----	52.0
% of time in non-home port (768.5 hours) -----	8.8
% of time in yard* (864.0 hours)-----	9.9
% of time underway(2571.0 hours) -----	29.3
% of time within 0-3 mile limit (205.0 hours) -----	2.0
% of time outside restricted waters (2366.0 hours)-----	27.0
% of underway time within 0-3 mile limit -----	8.0
% of underway time outside restricted waters-----	90.0
Number of 3-mile crossings-----	72
Number of home port dockings-----	39
Number of non-home port dockings-----	51
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non-home port -----	973.5
% of time spent within 0-3 mile limit and/or in non-home port -----	11.0
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port) -----	97.5
Maximum continuous number of hours outside restricted waters -----	430.0

* Refurbishment

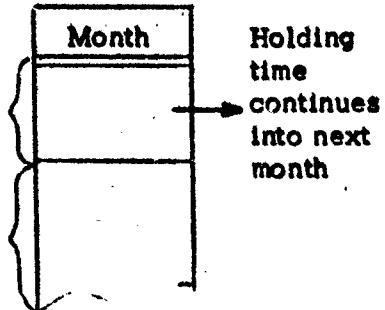
HOLDING TIMES

Vessel GALLATIN (378')

1974						1975					
July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
9.0	4.0	76.0	5.0	75.0	2.0	2.0	8.5	57.5	9.0	97.5	7.0
1.75	2.0	23.5	12.5	3.0	2.0	2.0	1.0	2.5	2.0	1.5	14.0
1.75	4.0		2.0		2.0		1.0		4.0	26.5	16.25
	2.0		5.0		2.0					14.0	13.0
	2.0									88.0	7.0
	24.0									12.0	13.0
	2.0									12.5	61.0
	2.0										24.5
	2.0										20.0
	40.0	→								22.75	→
											60.0
											60.5
											2.0
											4.0

Maximum holding times for sorties

All other sortie holding times



GALLATIN (378')

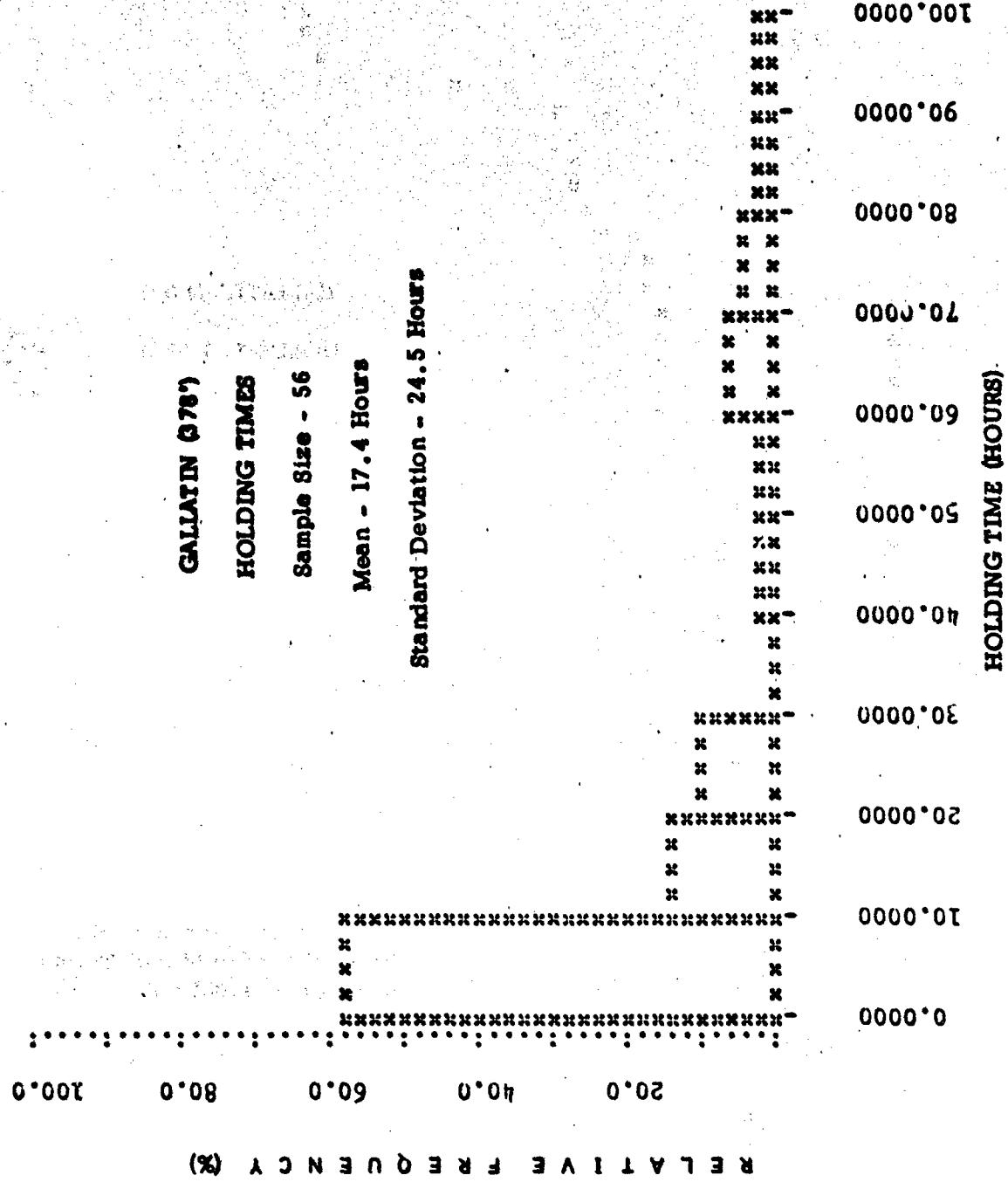
HOLDING TIMES

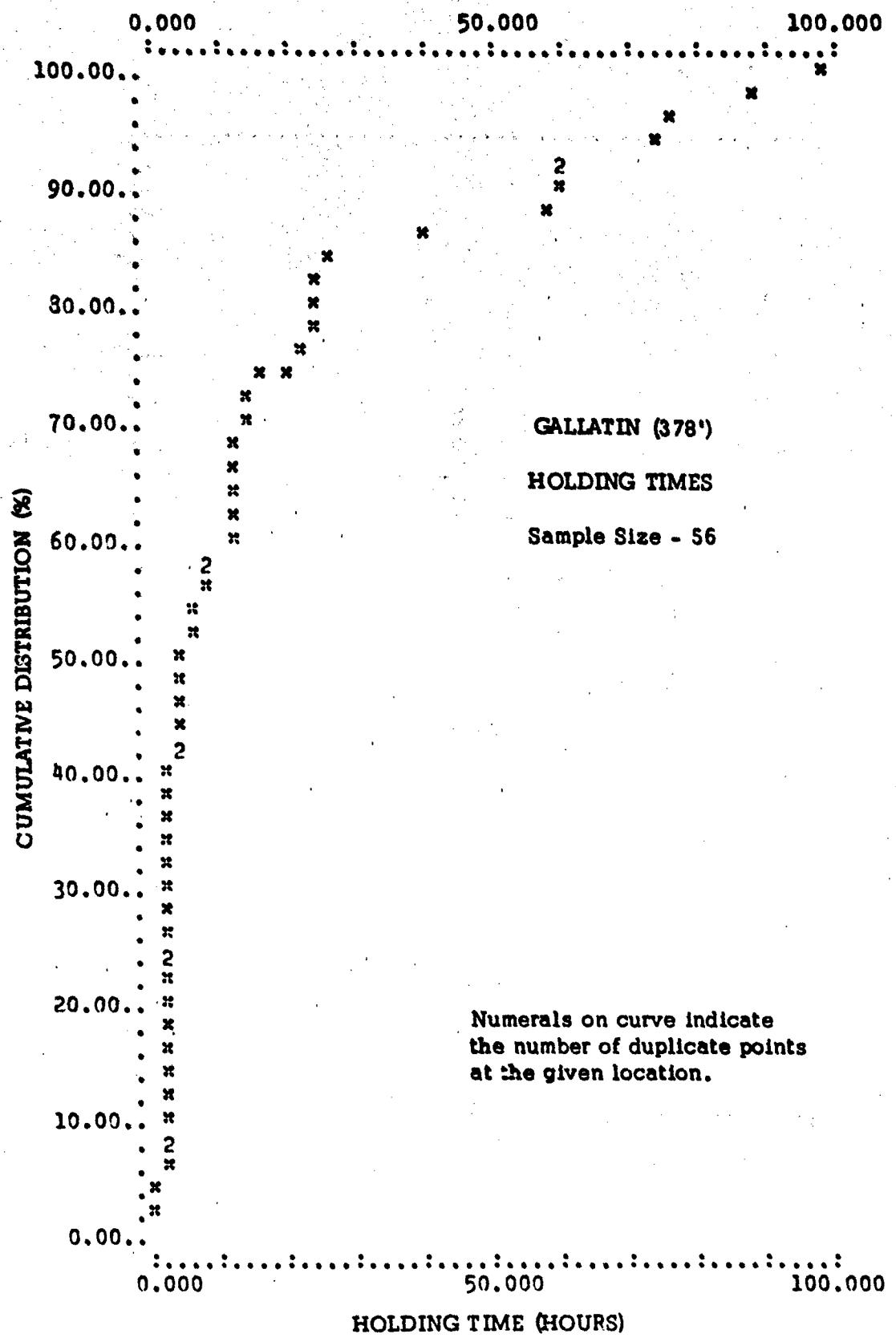
FREQUENCY TABLE

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
1.0000	2	3.57	2	3.57
1.5000	1	1.79	3	5.36
1.7500	2	3.57	5	8.93
2.0000	15	26.79	20	35.71
2.5000	1	1.79	21	37.50
3.0000	1	1.79	22	39.29
4.0000	4	7.14	26	46.43
5.0000	2	3.57	28	50.00
7.0000	2	3.57	30	53.57
8.5000	1	1.79	31	55.36
9.0000	2	3.57	33	58.93
12.0000	1	1.79	34	60.71
12.5000	2	3.57	36	64.29
13.0000	2	3.57	38	67.86
14.0000	2	3.57	40	71.43
16.2500	1	1.79	41	73.21
20.0000	1	1.79	42	75.00
22.7500	1	1.79	43	76.79
23.5000	1	1.79	44	78.57
24.0000	1	1.79	45	80.36
24.5000	1	1.79	46	82.14
26.5000	1	1.79	47	83.93
40.0000	1	1.79	48	85.71
57.5000	1	1.79	49	87.50
50.0000	1	1.79	50	89.29
60.5000	1	1.79	51	91.07
61.0000	1	1.79	52	92.86
75.0000	1	1.79	53	94.64
76.0000	1	1.79	54	96.43
88.0000	1	1.79	55	98.21
97.5000	1	1.79	56	100.00

NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of number of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less





GALLATIN (378')
CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

**LOWER LIMIT? 97.5001
100 % BELOW THE LOWER LIMIT**

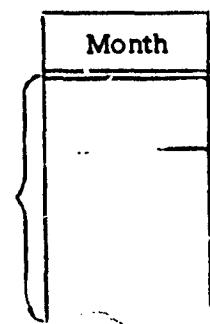
CONF LEVEL	LOWER	UPPER
50	97.60	100.00
75	96.40	100.00
90	94.80	100.00
95	93.70	100.00
99	91.00	100.00

**Sample Size - 56
Maximum Holding Time - 97.5 Hours**

TIMES BEYOND RESTRICTED WATERS

Vessel GALLATIN (378')

1974						1975					
July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
7.0	16.0	416.0	62.5	6.5	212.0	60.5	123.5	158.0		45.0	31.5
	4.0	192.5	14.0		93.0			430.0	→	94.0	11.0
	8.0								3.5	10.0	17.0
84.0										8.0	11.0
										12.0	11.0
										35.5	47.0
										25.5	23.5
											4.0
											12.0
											13.0
											44.0
											20.0



Sortie times beyond
restricted waters

→ Time beyond restricted
waters continues
into next month

GALLATIN (378')
TIMES BEYOND RESTRICTED WATERS

F R E Q U E N C Y T A B L E

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
3.5000	1	2.78	1	2.78
4.0000	2	5.56	3	8.33
6.5000	1	2.78	4	11.11
7.0000	1	2.78	5	13.89
8.0000	2	5.56	7	19.44
10.0000	1	2.78	8	22.22
11.0000	3	8.33	11	30.56
12.0000	2	5.56	13	36.11
13.0000	1	2.78	14	38.89
14.0000	1	2.78	15	41.67
16.0000	1	2.78	16	44.44
17.0000	1	2.78	17	47.22
20.0000	1	2.78	18	50.00
23.5000	1	2.78	19	52.78
25.5000	1	2.78	20	55.56
31.5000	1	2.78	21	58.33
35.5000	1	2.78	22	61.11
44.0000	1	2.78	23	63.89
45.0000	1	2.78	24	56.67
47.0000	1	2.78	25	69.44
60.5000	1	2.78	26	72.22
62.5000	1	2.78	27	75.00
84.0000	1	2.78	28	77.78
93.0000	1	2.78	29	80.56
94.0000	1	2.78	30	83.33
123.5000	1	2.78	31	86.11
158.0000	1	2.78	32	88.89
192.5000	1	2.78	33	91.67
212.0000	1	2.78	34	94.44
416.0000	1	2.78	35	97.22
430.0000	1	2.78	36	100.00

NOTES:

- (1) Unique values of time durations (hours) beyond restricted waters
- (2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
- (3) % of all time intervals beyond restricted waters of indicated duration
- (4) Cumulative count of number of time intervals beyond restricted waters of indicated duration or less
- (5) Cumulative % of time intervals beyond restricted waters of indicated duration or less

GALLATIN (378")

TIMES BEYOND RESTRICTED WATERS

Sample Size - 36

Mean - 65.7 Hours

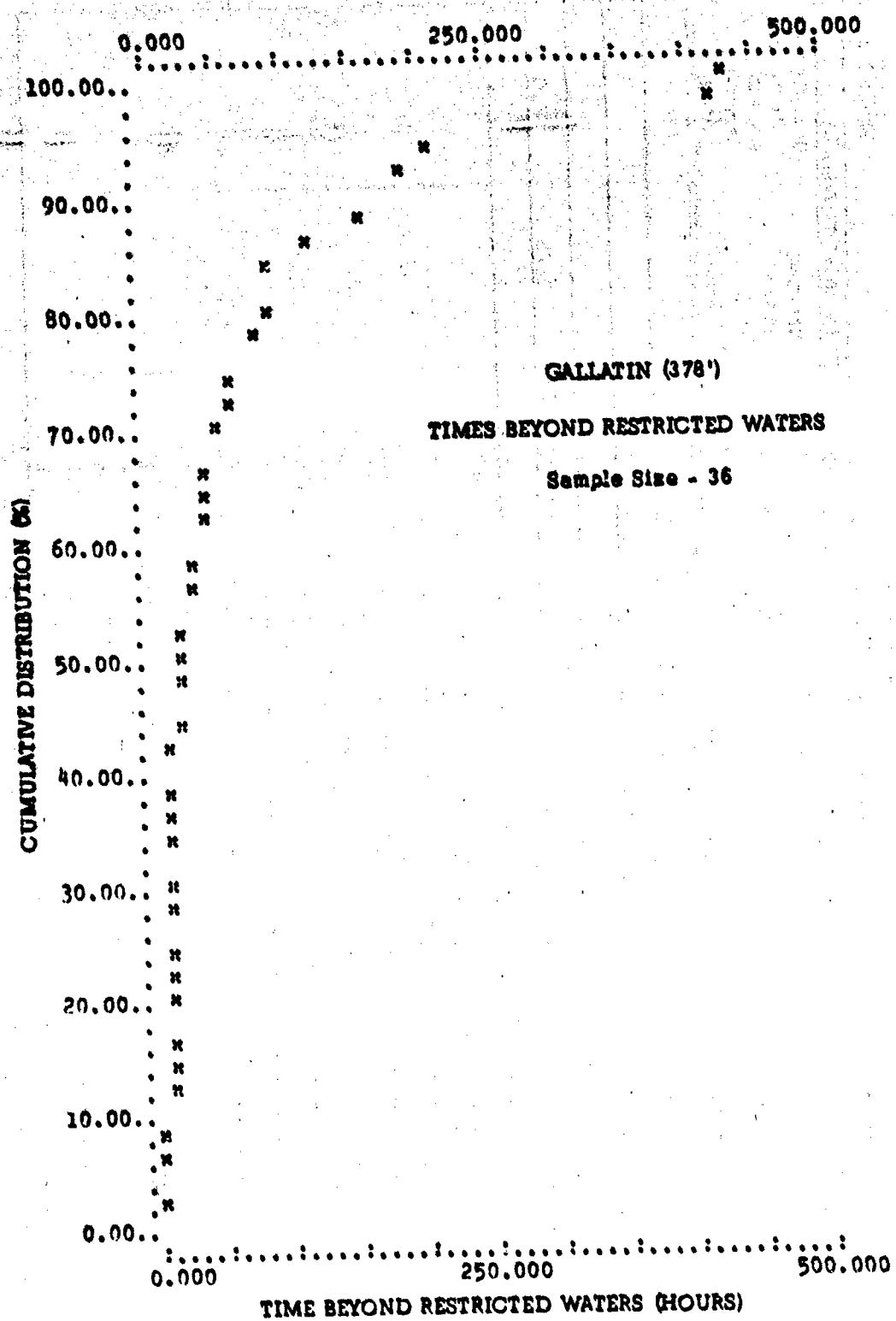
Standard Deviation - 102.6 Hours

20.0 40.0 60.0 80.0 100.0

RELATIVE FREQUENCY (%)

TIME BEYOND RESTRICTED WATERS (HOURS)

500.0000
450.0000
400.0000
350.0000
300.0000
250.0000
200.0000
150.0000
100.0000
50.0000
0.0000



DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378')

JULY 1974

Sheet 1 of 12

Charlie Stahig

(1) Underway time within 3-mile limit split in half.

SORTE CHARACTERISTICS (Estimated)		TIME INTERVALS		
TYPE	HOLDING TIME INTERVALS (Hours)	RESTRICTED WATERS		(Hours)
		MAX	OTHERS	
I		9.0		
II b=1	1.75	1.75	7.0	

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378)

AUGUST 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT		HOURS IN NON-HOME PORT		TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	HOURS	
	Home	Non-Home	Home	Non-Home	Port	MAX			OTHERS	
8/1*	x	x			20.0		4.0	4.0	0	1
8/2	x	x			4.0		20.0	4.0(1)	2	II b=1
8/3-8/6#					96.0					
8/7	x	x			20.0		4.0	4.0	0	I
8/8	*	x	x		16.0		8.0	4.0(1)	2	II b=1
8/9-8/12*					96.0					
8/13	x	x			12.0		4.0(1)	2	2.0	II b=1
8/14	x						24.0	24.0	0	I
8/15*	x				24.0					
8/16-8/26*					264.0					
8/27-8/30	x				8.0		88.0	4.0(1)	2	III a=1
8/31					x		24.0(2)			b=3
										b=2
									

33

* Bravo Status
Charlie Status
(2) Port Everglades, Florida

(1) Underway time within 3-mile limit split in half.
(2) Port Everglades, Florida

Sheet 2 of 12

TIME INTERVALS	SOUTHE CHARACTERISTICS (Estimated)	
	TYPE	HOLDING TIME INTERVALS (Hours)
BEYOND RESTRICTED WATERS		
	MAX	OTHERS
		(Hour)

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378')

SEPTEMBER 1974

DATE Month <u>9</u> Year <u>74</u>	DOCKINGS		Hours in Home port	Hours in Non- Home port	Total hours under- way	Hours under- way within 3-mile limit	Number of 3-mile crossings	SOCIE CHARACTERISTICS (Estimated)		
	Home	Non-Home						Type	Holding time intervals (Hours)	Time intervals beyond restricted waters (Hours)
Departure	Arrival	Departure	Arrival	Departure	Arrival	Max	Others	Max	Others	Max
9/1		x			12.0	12.0	2.0	1		
9/2-9/18					408.0	408.0	2.0	1		
9/19-9/27					19.5	196.5	4.0(1)	2		
9/28-9/30*					72.0					

Sheet 3 of 12

TIME INTERVALS (Hours)	HOLDING TIME INTERVALS (Hours)		
	TYPE	MAX	OTHERS

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

OCTOBER 1974

Vessel CALLATON (3781)

DATE Month Year	DOCKINGS		Hours in Non-Home Port	Total Hours Under-Way	Hours Under-Way Within 3-Mile Limit	Number of 3-Mile Crossings
	Home	Non-Home				
10/1-10/3*						
10/4	x		x	19.0	3.5	0
10/5-10/15*				264.0		
10/16		x			24.0	10.0(1)
10/17-10/31 x(2)					360.0	0

* Bravo Stavros
* Charlie Stavros

(1) Underway time within 3-mile limit split in half.
 (2) Curtis Bay Yard - Use Municipal Sewage System

Sheet 4 of 12

SOME CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
TIME	HOLDING TIME INTERVALS (Hours)	MAX	OTHERS
II b-1	5.0	5.0	14.0
.....			

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378")

MOVEMENT

FRENCH STATES

(1) Underway time within 3-mile limit split into 3.0 and 0.5 hrs.
 (2) Curtis Bay Ward - Use Municipal Sewage System

Sheet 5 of 12

DETAILED MISSING PERSON DATA

Vessel — Canavan's disease

DECEMBER 1974

DOCMENTS	DATE		HOURS		HOURS		TOTAL HOURS		HOURS		NUMBER OF 3-MILE PROCESSINGS	
			IN HOME PORT		IN NON-HOME PORT		UNDER-WAY		UNDER-WAY		WITHIN 3-MILE LIMIT	
	Home	Non-Home	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
	March 12 Year 74											
12/1-12/15					360.0							
12/16-12/24							216.0		4.0(1)	2		
12/25-12/26					47.0							
12/27-12/30							97.0		4.0(1)	2		
12/31 (2) *					24.0							

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SOME CHARACTERISTICS (Continued)		TIME INTERVALS		
TIME	WATER LEVEL INTERVALS (Hours)	WATER LEVEL INTERVALS (Hours)		SECOND RESTRICTED WATERS (Hours)
		MIN	OTHERS	
II	2.0	2.0	2.0	212.0
II	2.0	2.0	2.0	93.0

(1) Underway time within 3-mile limit split in half.

* Bravo Status
Charlie Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel - GAVIACINI (area 1)

JANUARY 1975

Sheet 7 of 12

SOURCE CHARACTERISTICS (Estimated)		TIME INTERVALS		BEYOND RESTRICTED WATERS (Hours)	
		HOLDING TIME INTERVALS (Hours)	MAX	OTHERS	
Type	II	2.0	2.0	60.5

(1) Underway time within 3-mile limit split in half,

DETAILED VESSEL MISSION PROFILE DATA

CALLATIN (378')

FEBRUARY 1975

Charlie Status

(1) Underway time within 3-mile limit split in half.

Sheet 8 of 12

SOME CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)		
TIME	HOLDING TIME INTERVALS (Hours)	OTHERS		123.5
		MAX		
I	8.5			
II	1.0	1.0		

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLIATION (378')

MARCH 1975

Charlie Status

(1) Underway time within 3-mile limit split in half.
 (2) Azores

Sheet 8 of 12

SOTRIE CHARACTERISTICS (Estimated)		TIME INTERVALS		
TYPE	HOLDING TIME INTERVALS (Hours)	BEYOND RESTRICTED WATERS (Hours)		MAX
		MAX	OTHERS	
III d=1	57.5	2.5,	2.0	158.0, 430.0

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378')

APRIL 1975

DATE Month <u>4</u> Year <u>75</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOME CHARACTERISTICS (continued)			
	Home	Non-Home						HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	MAX	OTHERS
4/1-4/6					130.0 (2)	2.0	1				
4/7-4/13*					182.0						
4/14	X	X	Departure		15.0	5.0	4.0	4.0	0	4.0	3.5
4/15	X		Arrival		16.5		7.5	4.0(1)	2		
4/16-4/30*					360.0						

Sheet 10 of 12

TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
	MAX	OTHERS
.....		
11-12	9.0	
12-13	1	
13-14		
14-15		
15-16		
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41		

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378)

MAY 1975

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON-HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Arrival	MAX	OTHERS	
5/1-5/10#										
5/11-5/12	x				240.0					
5/13	x				48.0	3.0(1)	2			
5/14-5/17	x	x			24.0(2)					
5/18-5/21*	x	x			96.0	2.0(1)	2			
5/22	x	x			96.0(3)					
5/23	x	x			13.0(3)	11.0	1.0(1)	2		
5/24-5/26#	x	x			15.0(3)	9.0	1.0(1)	2		
5/27	x	x			72.0(3)					
5/28-5/29	x	x			11.0(3)	13.0	1.0(1)	2		
5/30-5/31	x	x			11.5(3)	36.5	1.0(1)	2		

Sheet 11 of 12

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON-HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Arrival	MAX	OTHERS	
III d=16										
5/28	x	x								
5/29	x	x								
5/30	x	x								
5/31	x	x								

Charlie Status

- (1) Underway time within 3-mile limit split in half.
 (2) Charleston (3) Cuba (4) Santo Domingo

DETAILED VESSEL MISSION PROFILE DATA

Vessel GALLATIN (378)

JUNE 1975

Sheet 12 of 12.

DATE Month Year	DOCMENTS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 2-MILE LIMIT	NUMBER OF 2-MILE CROSSINGS LIMIT	SOME CHARACTERISTICS (estimated)			TIME INTERVALS SECOND RESTRICTED WATERS (Hours)	
	Home	Non-Home						HOLDING TIME INTERVALS (Hours)				
	Departure Arrival	Departure Arrival						TIR	MAX	OTHERS		
6/1-6/2	x	x			15.0(3)	13.0	1.5(1)	2				
6/3	x	x			12.0(2)	12.0	1.0(1)	2				
6/4	x	x			6.0(2)	18.0	1.0(1)	2				
6/5	x	x			12.0(2)	12.0	1.0(1)	2				
6/6	x	x			12.0(2)	12.0	1.0(1)	2				
6/7-6/8					48.0(2)							
6/9-6/10	x					48.0	1.0(1)	2				
6/11-6/12	x	x			23.5(2)	24.5	1.0(1)	2				
6/13	x	x			19.0(2)	5.0	1.0(1)	2				
6/14-6/16	x	x			59.0(4)	13.0	1.0(1)	2				
6/17-6/19	x	x			58.0(4)	14.0	1.0(1)	2				
6/20-6/21		x				48.0	4.0(1)	2				
6/22-6/25	x				96.0							
6/26	x	x			17.0		7.0	0	1	7.0	0.0	
6/27-6/28					48.0						0.6	
6/29-6/30	x	x			10.0	10.0	28.0	8.0(1)	2	II b=1	14.0	
											20.0	

(1) Underway time within 3-mile limit split in half.
 (2) Cuba (3) Santo Domingo (4) Port Everglades

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel GALLATIN (378')

Sheet 1 of 3

<p>7/26/74</p> <p>3 Mile</p> <p>7/29/74</p> <p>3 Mile</p> <p>HP — 1.75 — 7.0</p> <p>HP — 1.75 — </p> <p>8/1/74</p> <p>3 Mile</p> <p>HP — 4.0 — </p> <p>HP — 4.0 — </p> <p>8/2/74</p> <p>3 Mile</p> <p>HP — 2.0 — </p> <p>HP — 2.0 — 16.0</p> <p>8/7/74</p> <p>3 Mile</p> <p>HP — 4.0 — </p> <p>8/8/74</p> <p>3 Mile</p> <p>HP — 2.0 — </p> <p>HP — 2.0 — 4.0</p> <p>8/13/74</p> <p>3 Mile</p> <p>HP — 2.0 — </p> <p>HP — 2.0 — 8.0</p> <p>8/14/74</p> <p>3 Mile</p> <p>HP — 24.0 — </p> <p>HP — 24.0 — </p>	<p>8/27/74 - 10/4/74</p> <p>3 Mile</p> <p>NHP — 2.0 — </p> <p>HP — 2.0 — 84.0</p> <p>3 Mile</p> <p>NHP — 2.0 — 416.0</p> <p>3 Mile</p> <p>NHP — 2.0 — 192.5</p> <p>3 Mile</p> <p>HP — 2.0 — 62.5</p> <p>3 Mile</p> <p>HP — 2.0 — 9.0</p> <p>3 Mile</p> <p>HP — 2.0 — 24.0</p> <p>3 Mile</p> <p>HP — 2.0 — 12.0</p> <p>3 Mile</p> <p>HP — 2.0 — 19.5</p> <p>3 Mile</p> <p>HP — 2.0 — 2.0</p> <p>3 Mile</p> <p>HP — 2.0 — 72.0</p> <p>10/16/74 - 10/21/74</p> <p>3 Mile</p> <p>HP — 5.0 — </p> <p>Yard</p> <p>HP — 5.0 — 14.0</p> <p>864.0</p> <p>504.0</p> <p>11/22/74-11/25/74</p> <p>3 Mile</p> <p>Yard</p> <p>HP — 11.5 — </p> <p>NHP — 12.5 — </p> <p>NHP — 19.0 — </p> <p>3 Mile</p> <p>HP — 5.0 — </p> <p>3 Mile</p> <p>HP — 24.0 — </p> <p>3 Mile</p> <p>HP — 2.5 — </p> <p>3 Mile</p> <p>HP — 0.5 — </p> <p>3 Mile</p> <p>HP — 3.0 — </p> <p>3 Mile</p> <p>HP — 6.5 — </p>
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DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel GALLATIN (378')

Sheet 2 of 3

Period	3 Mile	3 Mile	NHP	
12/16/74 - 12/26/74	3 Mile			
	HP — 2.0 —	212.0		
	HP — 2.0 —			
12/27/74 - 12/30/74	3 Mile			
	HP — 2.0 —	93.0		
	HP — 2.0 —			
1/29/75 - 2/19/75	3 Mile			
	HP — 2.0 —	60.5		
	HP — 2.0 —			
2/20/75 - 2/22/75	NHP	3 Mile		
	HP — 2.0 —	6.5		
	HP —			
2/23/75-3/10 75	3 Mile			
	1.0 —			
	1.0 —	123.5		
	1.0 —			
3/11/75-4/13/75	3 Mile	3 Mile	NHP	
	HP — 2.5 —	159	2.5	5.0 }
				530 }
	HP — 2.0 —	302	2.0	48.0 }
				128 }
	3 Mile	3 Mile		
4/14/75-4/15/75	NHP	3 Mile		
	HP — 2.0 —	5.0	2.0	
	HP — 4.0 —		3.5	

DETAILED SORTIE CHARACTERISTICS (Estimated)

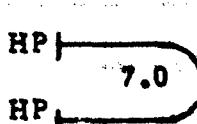
Vessel GALLATIN (378')

Sheet 3 of 3

5/11/75 - 6/25/75 (Cont'd)

3 Mile	NHP
11.0	0.5
47.0	0.5
23.5	0.5
4.0	0.5
12.0	0.5
13.0	0.5
HP	2.0 + 44.0
3 Mile	2.0

6/26/75



6/29/75-6/30/75

3 Mile	3 Mile	NHP
HP	4.0	+ 2.0 + 4.0
12.0	60.0	10.0
48.0		

VIGOROUS (210')

Vessel Characteristic	Data
Class	WHEC - 627 Resolute (210') B Class
Type	Medium Endurance Cutter
Crew Size	60
Home Port	New London, Connecticut
Mission Profile Data Source and Time Interval	From Summary Log 12 Months 8/1/74-7/31/75

Vessel VIGGROUS (210')
(On Year Average - August 1974- July 1975)

% of time in home port (4930.0 hours) -----	56.3
% of time in non-home port (334.0 hours)-----	4.1
% of time in yard* (992.0 hours)-----	11.0
% of time underway(2504.0 hours) -----	28.6
% of time within 0-3 mile limit (152.2 hours) -----	1.7
% of time outside restricted waters (2351.8 hours)-----	26.9
% of underway time within 0-3 mile limit -----	6.0
% of underway time outside restricted waters-----	94.0
Number of 3-mile crossings-----	30
Number of home port dockings-----	32
Number of non-home port dockings-----	24
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non-home port -----	486.2
% of time spent within 0-3 mile limit and/or in non-home port -----	5.6
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port) -----	172.0
Maximum continuous number of hours outside restricted waters -----	353.0

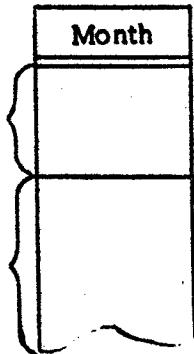
* Scheduled Yard Availability

HOLDING TIMES

Vessel VIGOROUS (210')

Maximum holding times of sorties

All other sortie
holding times



VIGOROUS (210⁴)**HOLDING TIMES**

F R E Q U E N C Y T A B L E

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
-----	-----	-----	-----	-----
2.0000	1	3.23	1	3.23
3.5000	4	12.90	5	16.13
4.0000	7	22.58	12	38.71
5.5000	2	6.45	14	45.16
6.0000	1	3.23	15	48.39
7.0000	8	25.81	23	74.19
7.2000	1	3.23	24	77.42
8.0000	1	3.23	25	80.65
14.0000	1	3.23	26	83.87
16.0000	1	3.23	27	87.10
23.0000	1	3.23	28	90.32
57.0000	1	3.23	29	93.55
72.0000	1	3.23	30	96.77
172.0000	1	3.23	31	100.00

NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of number of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less

RELATIVE FREQUENCY (%)

20.0 40.0 60.0 80.0 100.0



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VIGOROUS (210)

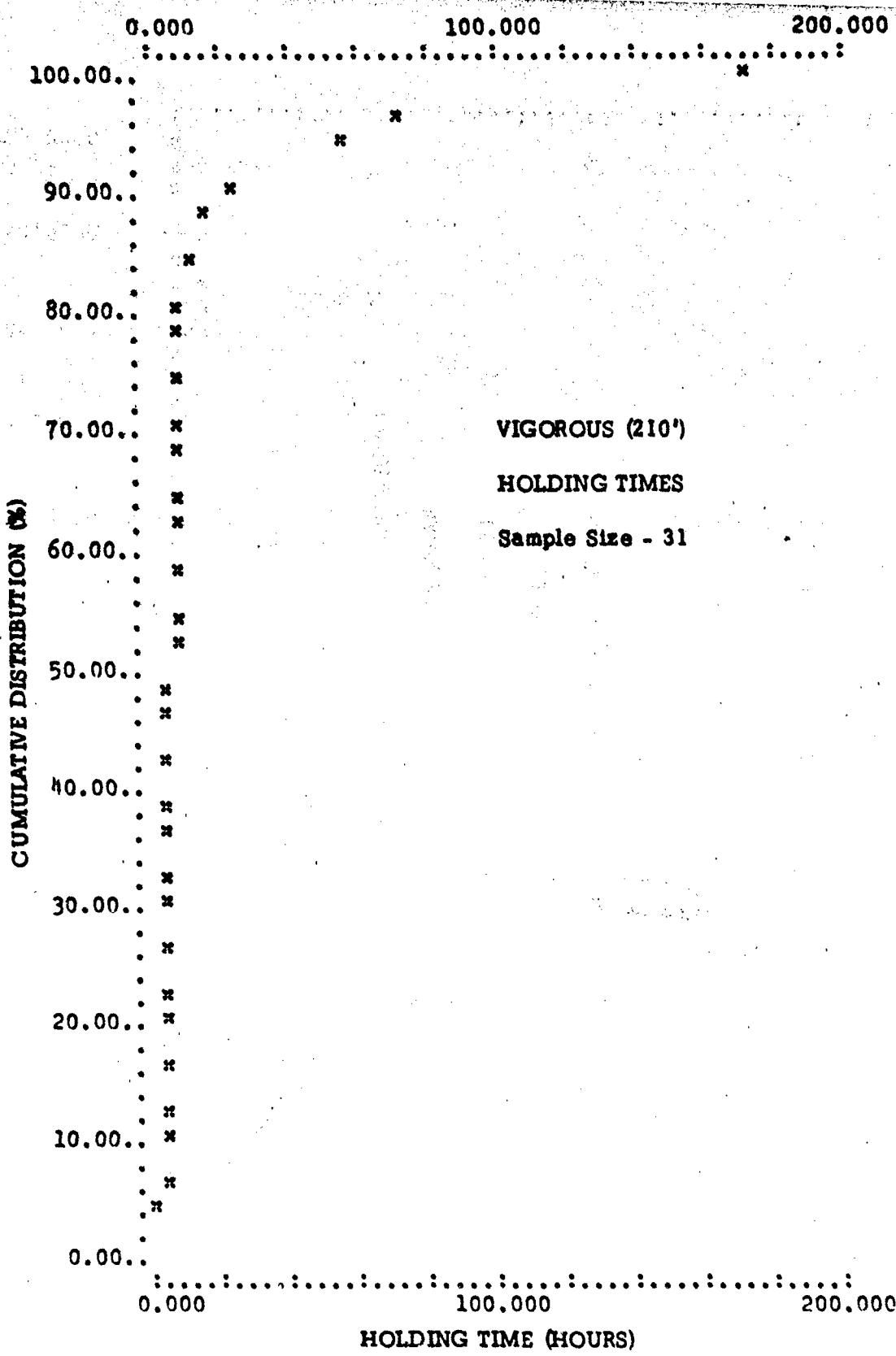
HOLDING TIMES

Sample Size - 31

Mean - 15.7 Hours

Standard Deviation - 32.7 Hours

HOLDING TIME (HOURS)



HOLDING TIME (HOURS)

VIGOROUS (10⁹)

CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

LOWER LIMIT? 172.0001
100 % BELOW THE LOWER LIMIT

CONF LEVEL	LOWER	UPPER
50	95.70	100.00
75	93.60	100.00
90	90.80	100.00
95	88.80	100.00
99	84.30	100.00

Sample Size - 31

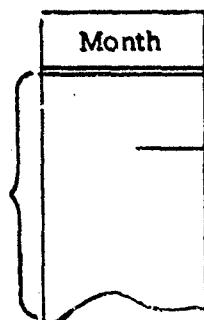
Maximum Holding Time - 172 Hours

TIMES BEYOND RESTRICTED WATERS

VESSEL VIGOROUS

1974					1975							
Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	
79.0		257.0	→	161.0	76.9		10.0	--	7.0	329.0	329.0	
353.0	→		205.0		76.9		10.0		161.0			

Sortie times
beyond
restricted
waters



Time beyond restricted
waters continues into
next month

VIGOROUS (210')

TIMES BEYOND RESTRICTED WATERS

FREQUENCY TABLE

CELL LOWER LIMIT	FREQ	REL FREQ	CUM		<u>NOTES:</u>
			CUM FREQ	REL FREQ	
7.0000	1	6.67	1	6.67	(1) Unique values of time durations (hours) beyond restricted waters
10.0000	2	13.33	3	20.00	
76.9000	2	13.33	5	33.33	
79.0000	1	6.67	6	40.00	
110.0000	1	6.67	7	46.67	
161.0000	2	13.33	9	60.00	(2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
187.0000	1	6.67	10	66.67	
205.0000	1	6.67	11	73.33	
257.0000	1	6.67	12	80.00	
329.0000	2	13.33	14	93.33	
353.0000	1	6.67	15	100.00	

- (1) Unique values of time durations (hours) beyond restricted waters
- (2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
- (3) % of all time intervals beyond restricted waters of indicated duration
- (4) Cumulative count of number of time intervals beyond restricted waters of indicated duration or less
- (5) Cumulative % of time intervals beyond restricted waters of indicated duration or less

VIGOROUS (210')
TIMES BEYOND RESTRICTED WATERS

Sample Size = 15

Mean = 156.8 Hours

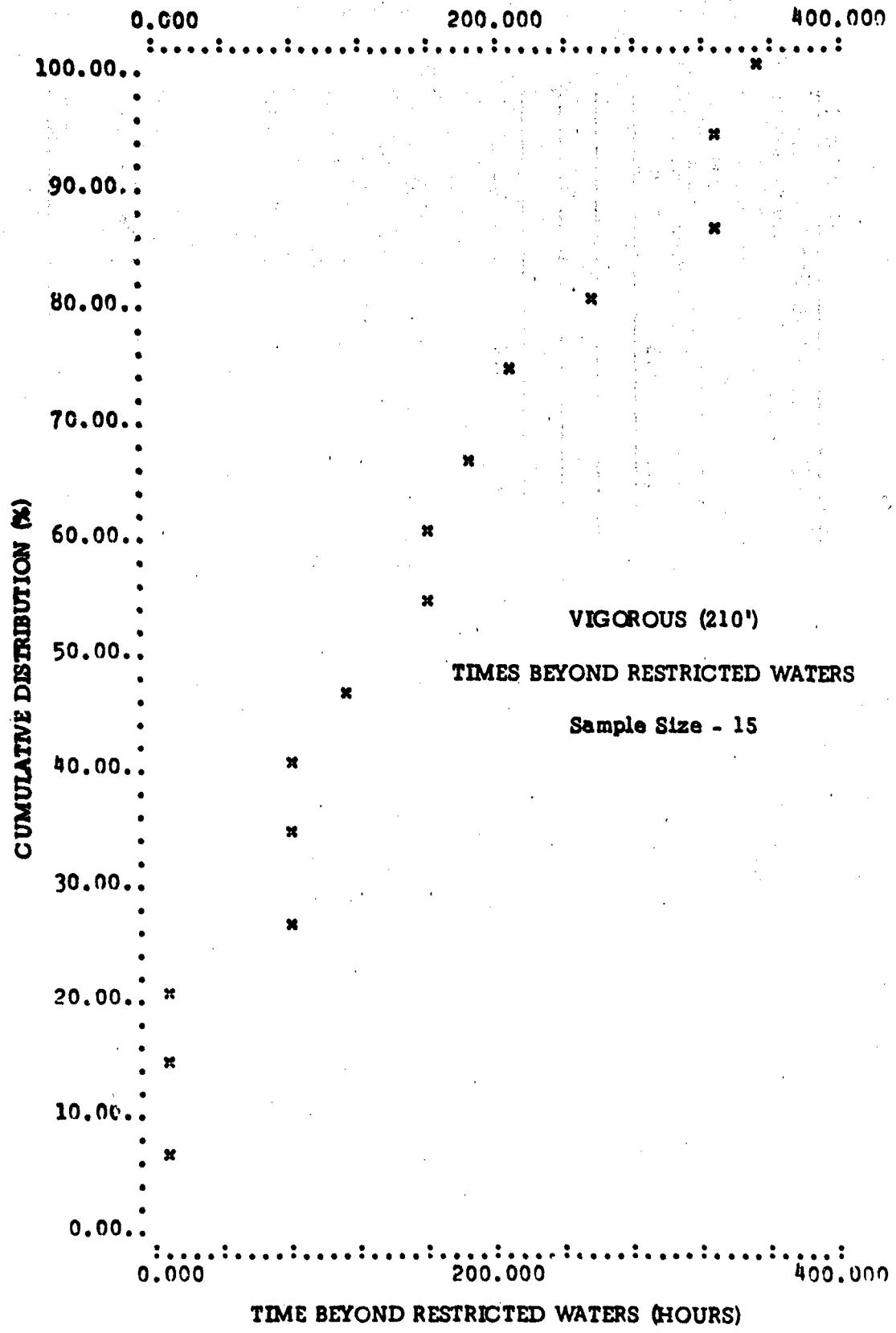
Standard Deviation = 118.8 Hours

5.0 10.0 15.0 20.0 25.0

RELATIVE FREQUENCY (%)

TIME BEYOND RESTRICTED WATERS (HOURS)

400.0000
360.0000
320.0000
280.0000
240.0000
200.0000
160.0000
120.0000
80.0000
40.0000
0.0000



DETAILED VESSEL MISSION PROFILE DATA

VIGOROUS (210")

AUGUST 1974

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Sheet 1 of 12

Bravo Status

(1) Underway time with 3-mile limit aside in law.

DETAINED VESSEL MISSION REPORT DATA

Vessel WCONCLES 103

SEPTEMBER 1974

DOCKINGS	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home				
DATE <u>March 9</u> <u>Year 74</u>	Arrival	Departure				
/1-9/9	x	x	20.0	4.0	192.0	3.0 (1)
9/10-9/30*			504.0			

Charlie Status

(1) Underway time within 3-mile limit split in half.

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DETAILED VESSEL MISSION PROFILE DATA

Vigorous [210]

Sheet 3 of 12

OCTOBER 1974		DOCKINGS		HOURS IN HOME PORT		TOTAL HOURS UNDER WAY		UNDER WAY WITHIN 3-MILE LIMIT		NUMBER OF 3-MILE CROSSINGS	
DATE		Home	Non-Home	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
Month 10 Year 74											
0/1	X	X		16.0		8.0		8.0		0	
0/2	X	X		8.0		16.0		16.0		0	
0/3-10/23*				504.0							
10/24-10/31		X				592.0		4.0		1	

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DETAILED VESSEL MISSION PROFILE DATA

Vessel - Vigorous (218.)

NOVEMBER 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	(1)
	Home	Non-Home					
11/1-11/4	X		X	20.0	4.0	72.0	3.6
11/5-11/16*				288.0			
11/17-11/25	X	X				216.0	11.0 ⁽¹⁾
11/26-11/30*						120.0	

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Sheet 4 of 12

SOME CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
TIME	HOLDING TIME INTERVALS (Hours)	MAX	OTHERS
II B-1	5.5	5.5	205.0
:			

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel VIGOROUS (210')

DECEMBER 1974

DATE Month 12 Year <u>74</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOUTHE CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hourly)
								MAX	OTHERS	
12/1-12/10*					240.0					
12/11-12/18 *	x	x	x	x	20.0	4.0	168.0	7.0 (1)	2	161.0
12/19-12/31#					312.0					

Sheet 5 of 12

DATE Month 12 Year <u>74</u>	ACTIVEL Departure	ACTIVEL Arrival	DEPARTURE TIME	ARRIVAL TIME	HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	SOUTHE CHARACTERISTICS (Estimated)		
								TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hourly)
12/1-12/10*										
12/11-12/18 *	x	x	x	x						
12/19-12/31#										

* Bravo Status # Charlie Status

(1) Underway time within 3-mile limit split into 4.0; 1.5; 1.5 hrs.

DETAILED VESSEL MISSION PROFILE DATA

Vessel VIGOROUS (210)

JANUARY 1975

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS WITHIN 3-MILE LIMIT	TIME INTERVALS INTERVALS (Hours)	TIME TYPE	TIME BEYOND RESTRICTED WATERS (Hours)
	Home	Non-Home							
1/1-1/5*			120.0				III a=1, D=7 C=1		
1/6-1/13	x	x	20.0	4.0	168.0	14.2	4	7.2	7.0, 4.0
1/14-1/28*					360.0				
1/29-1/31	x	x			4.0	68.0	3.0	1	III a=2 d=1 C=1
								

* Bravo Status

Sheet 6 of 12

SOUTHE CHARACTERISTICS (Estimated)		TIME INTERVALS	
HOLDING TIME INTERVALS (Hours)	TYPE	BEYOND RESTRICTED WATERS (Hours)	(Hours)

DETAILED VESSEL MISSION PROFILE DATA

Vessel VIGOROUS (210')

FEBRUARY 1975

Sheet 7 of 12

Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

vessel vicarious (2187)

MARCH 1975

Charlie 8 status

(1) Underway time within 3-mile limit split in half.

**(2) Governor's Island (3) Scheduled Yard Availability - Staten Island Yard
Use Municipal Sewage System**

DETAILED VESSEL MISSION PROFILE DATA

Vessel - VIGOROUS (2.10")

APRIL 1975

Sheet 9 of 12

SOUTIE CHARACTERISTICS (Estimated)		TIME INTERVALS	
		HOLDING TIME INTERVALS (Hour)	BEYOND RESTRICTED WATERS (Hour)
TYPE	MAX	OTHERS	

(1) Scheduled Yard Availability (Staten Island Yard) - Use Municipal Sewage System

DETAILED VESSEL MISSION PROFILE DATA

Vessel VIGOROUS (210')

MAY 1975

DATE	DOCKINGS		HOURS IN NON-HOME PORT	HOURS IN HOME PORT	TOTAL HOURS UNDER-WAY	HOURS UNDER-WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOCITE CHARACTERISTICS (Estimated)		
	Home	Non-Home						Type	Holding Time Intervals (Hours)	Time Intervals Beyond Restricted Waters (Hours)
Month	Year	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure	Max Others
5/1-5/10					240.0	(3)				
5/11	x	(3)			10.0	(3)	14.0	7.0 (1)	2	II b=1 3.5 3.5
5/12-5/13*	x				48.0					
5/14-5/21	x	x	x	x	20.0	4.0	168.0	7.0 (2)	2	II b=1 7.0 4.0 161.0
5/22-5/31					240.0					

Sheet 10 of 12

DATE	HOURS IN NON-HOME PORT	HOURS IN HOME PORT	TOTAL HOURS UNDER-WAY	HOURS UNDER-WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	TIME INTERVALS (Estimated)		
						Type	Holding Time Intervals (Hours)	Time Intervals Beyond Restricted Waters (Hours)
5/1-5/10			240.0	(3)				
5/11			10.0	(3)	14.0	7.0 (1)	2	II b=1 3.5 3.5
5/12-5/13*			48.0					
5/14-5/21			20.0	4.0	168.0	7.0 (2)	2	II b=1 7.0 4.0 161.0
5/22-5/31			240.0					

* Bravo Status

(1) Underway time within 3-mile limit split in half.

- (2) Underway time within 3-mile limit split into 4.0, 1.5, 1.5 hours
- (3) Staten Island Yard (OVERHAUL) - Use Municipal Sewage System

DETAILED VESSEL MISSION PROFILE DATA

VESSEL VIGOROUS (210")

TINTZ 1975

DATE	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home					
Month <u>6</u> Year <u>75</u>	Arrival	Departure					
6/1-6/7*	x	x			168.0		
6/8-6/22	x	x	x	x	20.0	4.0	336.0
6/23-6/30*					192.0		7.0 [1]
							2

6/23-6/30*

Sheet 11 of 12

SOUTIE CHARACTERISTICS (Estimated)		TIME INTERVALS		
TYPE	HOLDING TIME INTERVALS (Hours)	BEYOND RESTRICTED WATERS (Hours)		MAX
		OTHERS	MAX	
II ^{a.m.} _{p.m.}	7.0	4.0	329.0	

Bravo Status

(1) Underway time within 3-mile limit split into 4-0; 1-5; 1-5 hours.

DETAILED VESSEL MISSION PROFILE DATA

Vessel VIGOROUS (2107)

JULY 1975

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12 of 12

Bravo Status

(1) Underway time within 3-mile limit split into 4.0; 1.5; 1.5 hours.

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel VIGOROUS (210')

Sheet 1 of 2

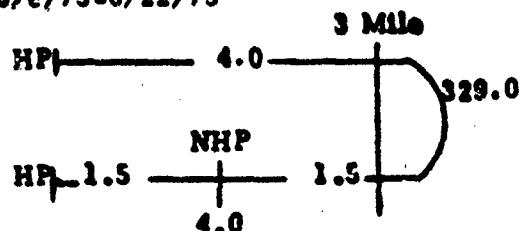
<p>8/1/74 - 8/4/74</p>	<p>1/6/75-1/13/75</p>
<p>8/8/74</p>	<p>1/29/75-2/13/75</p>
<p>8/25/74-9/9/74</p>	
<p>10/1/74</p>	<p>3/22/75-3/31/75</p>
<p>10/2/74</p>	
<p>10/24/74-11/4/74</p>	<p>5/11/75-5/13/75</p>
<p>11/17/74-11/26/74</p>	<p>5/14/75-5/21/75</p>
<p>12/11/74-12/18/74</p>	<p>161.0</p>

DETAILED SORTIE CHARACTERISTICS (Estimated)

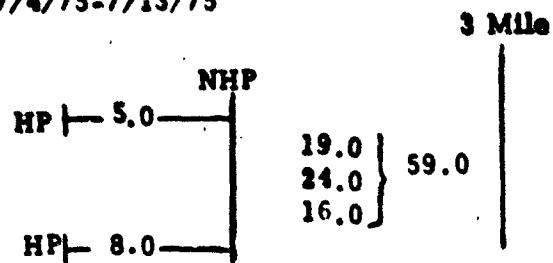
Vessel VIGOROUS (210')

Sheet 2 of 2

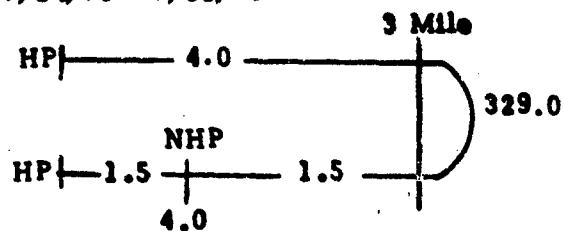
6/8/75-6/22/75



7/4/75-7/13/75



7/14/75 - 7/31/75



FIREBUSH (180')

Vessel Characteristic	Data
Class	WLB - 393 Basswood (180') C Class
Type	Buoy Tender (Seagoing)
Crew Size	50
Home Port	Governor's Island, New York
Mission Profile Data Source and Time Interval	From Summary Log <u>12 Months</u> <u>8/1/74-7/31/75</u>

SUMMARY OF MISSION PROFILE CHARACTERISTICS

Vessel FIREBUSH (180')

(One Year Average - August 1974-July 1975)

% of time in home port (6362.0 hours) -----	72.6
% of time in non-home port (377.2 hours)-----	4.3
% of time in yard* (768.0 hours)-----	8.8
% of time underway(1252.8 hour) -----	14.3
% of time within 0-3 mile limit (860.7 hours) -----	9.8
% of time outside restricted waters (392.1 hours)-----	4.5
% of underway time within 0-3 mile limit -----	68.7
% of underway time outside restricted waters-----	31.3
Number of 3-mile crossings-----	68
Number of home port dockings-----	201
Number of non-home port dockings-----	29
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non-home port -----	1237.9
% of time spent within 0-3 mile limit and/or in non-home port -----	14.1
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port) -----	277.9
Maximum continuous number of hours outside restricted waters -----	99.3

* Scheduled Yard Availability

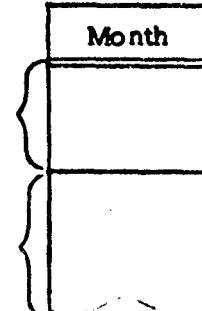
HOLDING TIMES

Vessel FIREBUSH (180')

1974					1975						
Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
15.9	3.55	9.2	8.7	3.9	29.2	6.2	12.7	9.5	8.2	-	1.0
1.95	8.1	277.9	8.9	15.9	2.75	10.0	2.5	0.9	2.5		2.0
3.65	7.5	3.0	12.7	16.9	15.8	6.7	3.25	9.6	9.3		1.6
0.9	9.8	11.1	9.3	1.0	0.8		8.4	11.9	5.7		12.6
0.7	12.6	0.5	2.6	14.9	5.6		6.9	11.3	9.2		54.0
9.0	2.6	20.4	9.7	3.5	6.0		9.3	17.2	9.0		30.2
11.9	5.25	2.0	13.2	4.35	8.9		6.0	7.4	4.9		10.4
1.95	2.5	1.0	7.2	16.3	6.9		9.5	0.85	7.3		6.6
3.65	6.3			10.6	0.5		13.0	7.1	7.15		7.8
0.9	9.6			3.15	5.3		6.1	0.5	9.5		8.5
0.7	3.55			7.0	26.25		7.4	0.4	8.1		10.2
	2.6			1.0	3.55		7.8	7.5	7.15		28.15
	5.25			2.0	1.0		2.5	1.5			2.0
				5.3	2.75		3.25	0.6			1.6
				4.35	0.8			3.3			0.75
				3.15				0.85			2.0
								0.5			
								0.4			
								1.5			

Maximum holding times of sorties

All other sorties holding times



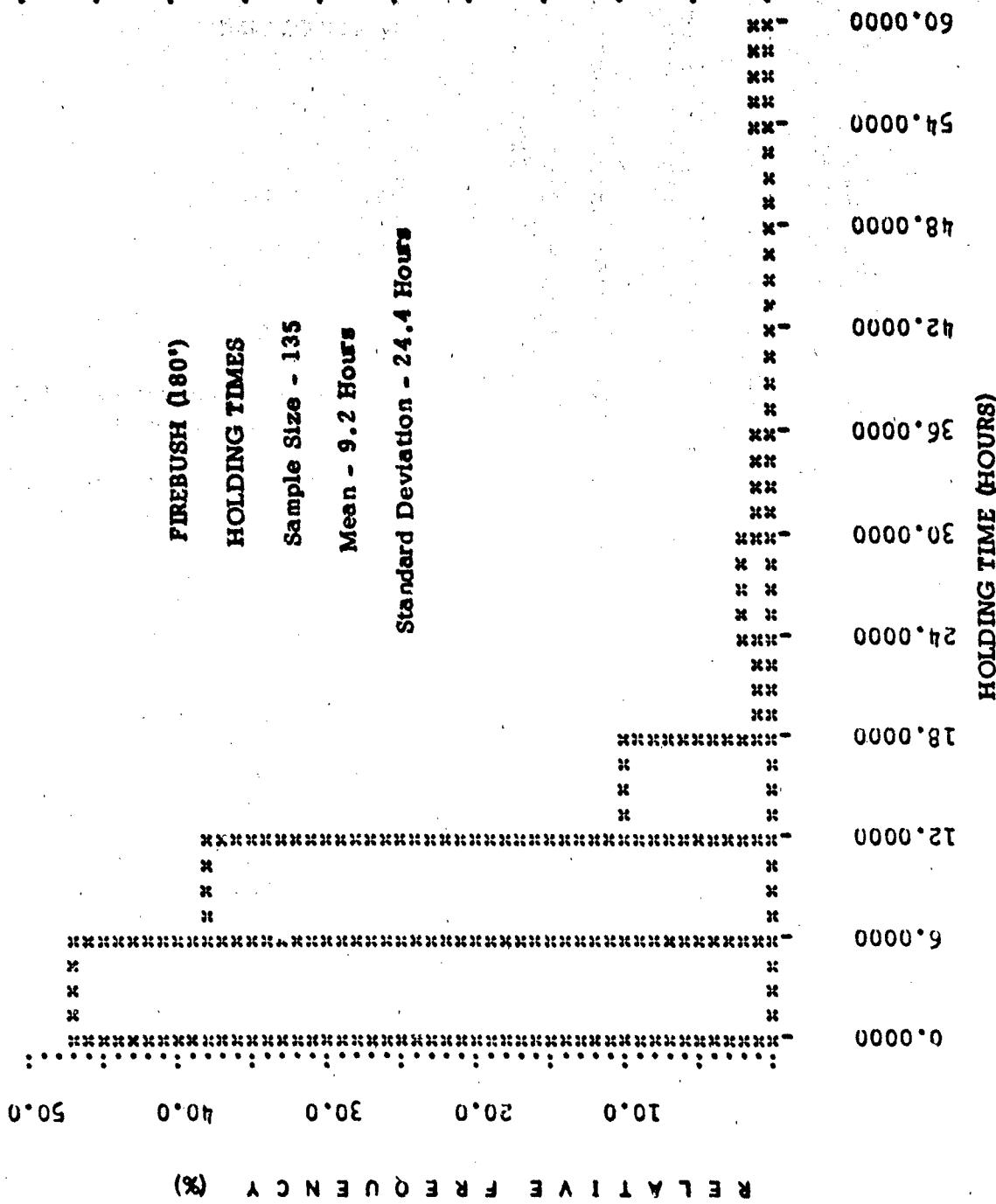
FREQUENCY TABLE					
(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM FREQ	
0.4000	2	1.48	2	1.48	
0.5000	4	2.96	6	4.44	
0.6000	3	0.74	7	5.19	
0.7000	2	1.48	9	6.67	
0.7500	2	0.74	10	7.41	
0.8000	2	1.48	12	8.89	
0.8500	2	1.48	14	10.37	
0.9000	3	2.22	17	12.59	
1.0000	5	3.70	22	16.30	
1.5000	2	1.48	24	17.78	
1.6000	2	1.48	26	19.26	
1.9500	2	1.48	28	20.74	
2.0000	5	3.70	33	24.44	
2.5000	4	2.96	37	27.41	
2.6000	3	2.22	40	29.63	
2.7500	2	1.48	42	31.11	
3.0000	1	0.74	43	31.85	
3.1500	2	1.48	45	33.33	
3.2500	2	1.48	47	34.81	
3.3000	2	0.74	48	35.56	
3.5000	1	0.74	49	36.30	
3.5500	3	2.22	52	38.52	
3.6500	2	1.48	54	40.00	
3.9000	1	0.74	55	40.74	
3.3500	2	1.48	57	42.22	
4.9300	2	0	58	42.96	
5.2500	2	1.79	60	44.44	
5.3000	2	1.48	62	45.93	
5.6000	1	0.74	63	46.67	
5.7000	1	0.74	64	47.41	
6.0000	2	1.48	66	48.89	
6.1000	1	0.74	67	49.63	
6.2000	1	0.74	68	50.37	
6.3750	1	0.74	69	51.11	
6.6000	1	0.74	70	51.85	
6.7000	1	0.74	71	52.59	
6.9000	2	1.48	73	53.07	
7.0000	1	0.74	74	54.81	
7.1000	1	0.74	75	55.56	
7.1500	2	1.48	77	57.04	
7.2000	1	0.74	78	57.78	
7.3000	1	0.74	79	58.52	
7.4000	2	1.48	81	60.00	
7.5000	2	1.48	83	61.48	
7.8000	2	1.48	85	62.96	
8.1000	2	1.48	87	64.44	
8.2000	1	0.74	88	65.19	
8.4000	1	0.74	89	65.93	
8.5000	1	0.74	90	66.67	
8.7000	1	0.74	91	67.41	
8.9000	2	1.48	93	68.89	
9.0000	2	1.48	95	70.37	
9.2000	2	1.48	97	71.85	
9.3000	3	2.22	100	74.07	
9.5000	3	2.22	103	76.30	
9.6000	2	1.48	105	77.78	
9.7000	1	0.74	106	78.52	
9.8000	1	0.74	107	79.26	
10.0000	1	0.74	108	80.00	
10.2000	1	0.74	109	80.74	
10.4000	1	0.74	110	81.48	
10.6000	1	0.74	111	82.22	
11.1000	1	0.74	112	82.96	
11.3000	1	0.74	113	83.70	
11.9000	2	1.48	115	85.19	
12.6000	2	1.48	117	86.67	
12.7000	2	1.48	119	88.15	
13.0000	1	0.74	120	88.89	
13.2000	1	0.74	121	89.63	
14.9000	1	0.74	122	90.37	
15.8000	1	0.74	123	91.11	
15.9000	2	1.48	125	92.59	
16.3000	1	0.74	126	93.33	
16.9000	1	0.74	127	94.07	
17.7000	1	0.74	128	94.81	
20.4000	1	0.74	129	95.56	
26.2500	1	0.74	130	96.30	
28.1500	1	0.74	131	97.04	
29.2000	1	0.74	132	97.78	
30.7000	1	0.74	133	98.52	
54.0000	1	0.74	134	99.26	
277.8999	1	0.74	135	100.00	

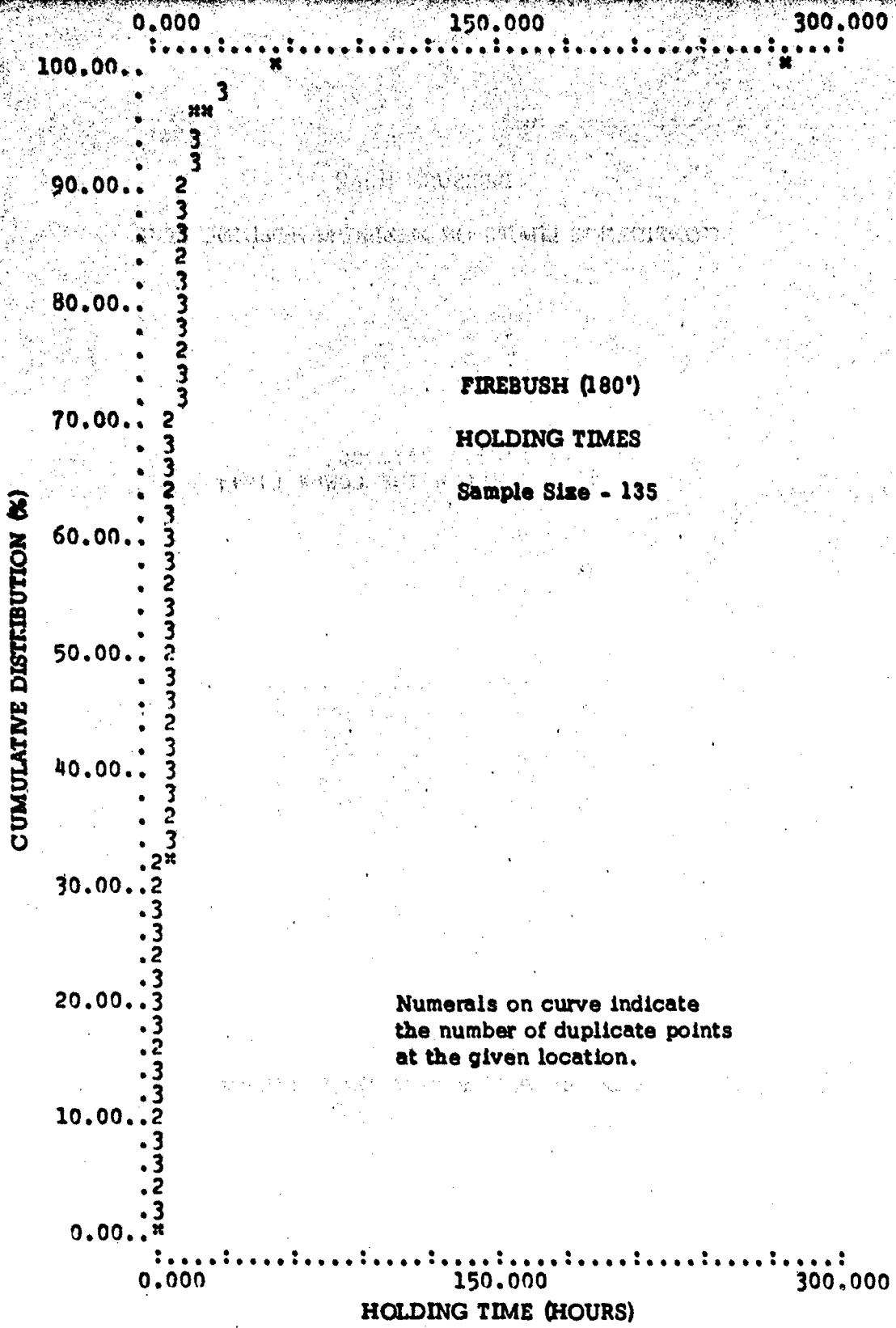
PIREBUSH (180')

HOLDING TIMES

NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of number of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less





FIREBUSH (180")

CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

**LOWER LIMIT? 277.9001
100 % BELOW THE LOWER LIMIT**

CONF LEVEL		LOWER	UPPER
50		99.00	100.00
75		98.50	100.00
90		97.90	100.00
95		97.40	100.00
99		96.20	100.00

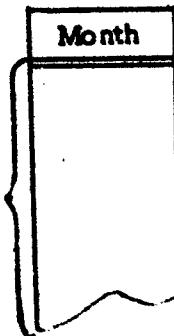
**Sample Size - 56
Maximum Holding Time 277.899 Hours**

TIMES BEYOND RESTRICTED WATERS

Vessel FIREBUSH (180')

1974					1975						
Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
7.5	9.0	15.0	-	6.0	8.1	-	2.3	99.3	1.0	-	14.8
6.0	5.0	10.0		22.0	9.0		3.5	3.5			12.0
15.0	2.0	20.0		12.0	12.0			7.0			6.0
2.0		16.0		6.0	8.0			13.0			11.1
				2.0	18.0			2.0			
								6.0			

Sortie times
beyond restricted
waters



PIREBUSH (180')

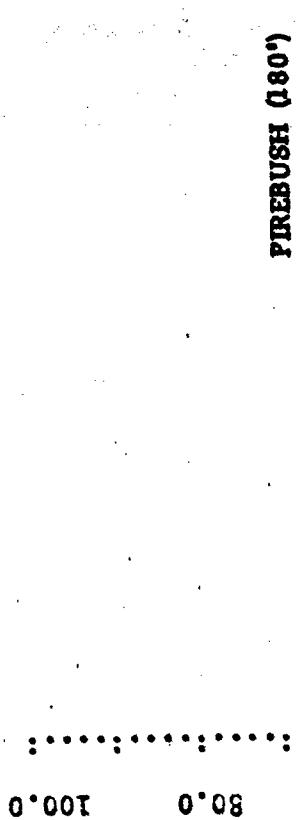
TIMES BEYOND RESTRICTED WATERS

F R E Q U E N C Y T A B L E

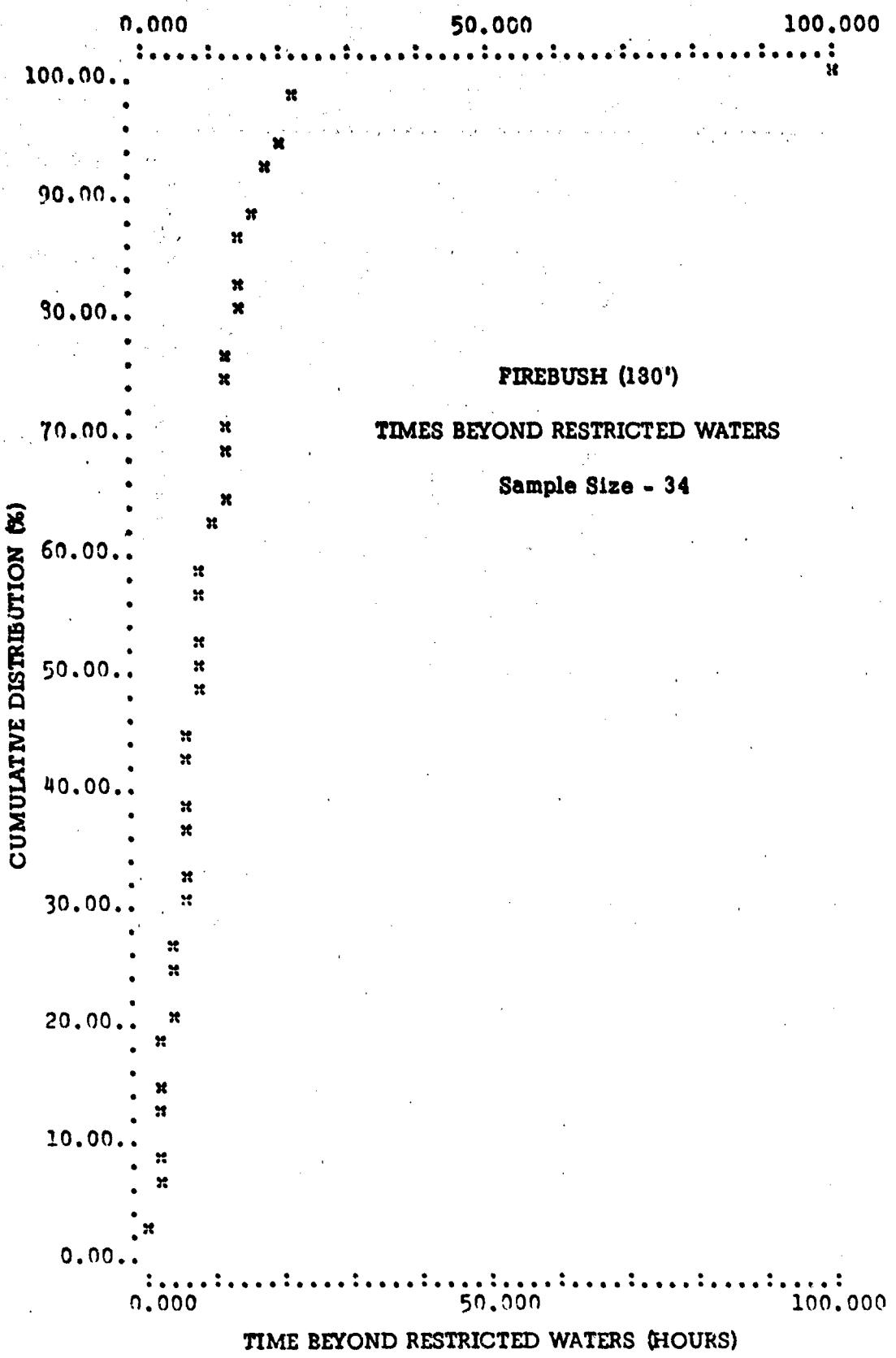
(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
1.0000	1	2.94	1	2.94
2.0000	4	11.76	5	14.71
2.3000	1	2.94	6	17.65
3.5000	2	5.88	8	23.53
5.0000	1	2.94	9	26.47
6.0000	5	14.71	14	41.18
7.0000	1	2.94	15	44.12
7.5000	1	2.94	16	47.06
8.0000	1	2.94	17	50.00
8.1000	1	2.94	18	52.94
9.0000	2	5.88	20	58.82
10.0000	1	2.94	21	61.76
11.1000	1	2.94	22	64.71
12.0000	3	8.82	25	73.53
13.0000	1	2.94	26	76.47
14.8000	1	2.94	27	79.41
15.0000	2	5.88	29	85.29
16.0000	1	2.94	30	88.24
18.0000	1	2.94	31	91.18
20.0000	1	2.94	32	94.12
22.0000	1	2.94	33	97.06
99.3000	1	2.94	34	100.00

NOTES:

- (1) Unique values of time durations (hours) beyond restricted waters
- (2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
- (3) % of all time intervals beyond restricted waters of indicated duration
- (4) Cumulative count of number of time intervals beyond restricted waters of indicated duration or less
- (5) Cumulative % of time intervals beyond restricted waters of indicated duration or less



RELATIVE FREQUENCY (%)



DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

AUGUST 1974

DATE	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home				
Month <u>8</u> Year <u>74</u>	Departure	Arrival				
8/1	x	x	8.1	15.9	15.9	0
8/2			24.0			
8/3	x	x	12.6	11.4	3.9(1)	2
8/4-8/6*			72.0			
8/7	x	x	10.7	13.3	7.3(1)	2
8/8	x	x	7.2	16.8	1.8(1)	2
8/9	x	x	20.6	3.4	1.4(1)	2
8/10-8/12*			72.0			
8/13	x	x	15.0	9.0	9.0	0
8/14	x	x	12.1	11.9	11.9	0
8/15-8/18				96.0		
8-19-8/31*				312.0		

* Bravo Status
Charlie Status

(1) Underway time within 3-mile limit split in half.

Sheet 1 of 20

SORTIE CHARACTERISTICS (Estimated)		TIME INTERVALS	
TYPE	HOLDING TIME INTERVALS (Hour)	BEYOND RESTRICTED WATERS (Hours)	
		MAX	OTHERS
I	15.9		
II b=1	1.95	1.95	7.5
II b=1	3.65	3.65	6.0
II b=1	0.9	0.9	15.0
II b=1	0.7	0.7	2.0
I	9.0		
I	11.9		

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

SEPTEMBER 1974

Sheet 2 of 20

DATE Month Year	DOCKINGS		HOURS IN NON-HOME PORT	HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS WITHIN 3-MILE LIMIT	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home					HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	TYPE
9/1*			24.0						
9/2-9/3*			48.0						
9/4	x	x	7.9		16.1	7.1(1)	2	11 b=1	3.55
9/5	x	x	15.9		8.1	8.1	0	1	8.1
9/6 9/8*			72.0						
9/9	x	x	16.5		7.5	7.5	0	1	7.5
9/10	x	x	14.2		9.8	9.8	0	1	9.8
9/11			24.0						
9/12	x	x	11.4		12.6	12.6	0	1	12.6
9/13-9/15*			72.0						
9/16	x	x	13.8		10.2	5.2(1)	2	11 b=1	2.6
9/17*			24.0						
9/18	x	x	11.5		12.5	10.5(1)	2	11 b=1	5.25
9/19	x	x	21.5		2.5	2.5	0	1	2.5
9/20-9/22			72.0						
9/23	x	x	17.7		6.3	6.3	0	1	6.3
9/24-9/25*			48.0						

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

SEPTEMBER 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS	UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SOUTHEAST CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	MAX	OTHERS
9/26	X	X	14.4		9.6	9.6	0		1	9.6
9/27-9/30*			96.0							

Sheet 3 of 20

DATE Month Year	TIME INTERVALS		TYPE	TIME INTERVALS (Estimated)	
	BEYOND RESTRICTED WATERS	(Hours)		MAX	OTHERS

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

OCTOBER 1974

DATE Month 10 Year 74	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Home-Home					HOLDING TIME INTERVALS (Hours)	TYPE	BETWEEN RESTRICTED WATERS (Hours)
							MAX	OTHERS	
10/1	x	x		14.8	9.2	0	1	9.2	
10/2-10/4				72.0					
10/5	x	x		8.0	16.0	1.0 ⁽¹⁾	2	II a-9 b=2	277.9 0.5, 20.4 15.0, 10.0
10/6		x		9.8	14.2	4.2 ⁽¹⁾	2		
10/7		x		24.0					
10/8	x	x		21.4	2.6	2.6	0		
10/9	x	x		16.3	7.7	7.7	0		
10/10	x	x		16.9	7.1	7.1	0		
10/11	x	x		16.4	7.6	7.6	0		
10/12	x	x		19.9	4.1	4.1	0		
10/13				24.0					
10/14				24.0					
10/15	x	x		16.6	7.4	7.4	0		
10/16	x	x		18.4	5.6	5.6	0		
10/17		x		24.0					
10/18	x			12.2	11.8	11.8			

Sheet 4 of 20

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

OCTOBER 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home					HOLDING TIME INTERVALS (hours)	TYPE	TIME INTERVALS BEYOND RESTRICTED WATERS (hours)
	Arrival	Departure	Arrival	Departure	Arrival	Departure	MAX	OTHERS	
10/19	X				24.0	4.0 ⁽¹⁾	2	II b=2	3.0
10/20	X				6.0	18.0	2.0 ⁽¹⁾	2	
10/21-10/22*					48.0				
10/23	X	X			12.9	11.1	11.1	0	1
10/24-10/28*					120.0				
10/29-10/31#					72.0				

* Bravo Status # Charlie Status

(1) Underway time within 3-mile limit split in half

Sheet 5 of 20

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

Sheet 6 of 20

DATE Month <u>11</u> Year <u>74</u>	DOCKINGS		Hours IN HOME PORT	Hours IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	Under- way within 3-MILE LIMIT	Number of 3-MILE CROSSINGS	SOUTHE CHARACTERISTICS (Estimated)							
	Home	Non-Home						HOLDING TIME INTERVALS (Hour)		TYPE					
								Arrival	Departure						
11/1-11/10*					240.0			1	8.7						
11/11	x	x		15.3	8.7	6.7	0								
11/12-11/13*				48.0											
11/14	x	x		15.1	8.9	8.9	0								
11/15*				24.0											
11/16	x	x		11.3	12.7	12.7	0								
11/17*				24.0											
11/18	x	x		14.7	9.3	9.3	0								
11/19	x	x		21.4	2.6	2.6	0								
11/20-11/21*				48.0											
11/22	x	x		14.3	9.7	9.7	0								
11/23	x	x		10.8	13.2	13.2	0								
11/24*				24.0											
11/25	x	x		16.8	7.2	7.2	0								
11/26-11/30*				120.0											

* Bravo Status

Charlie Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

DECEMBER 1974

Sheet 7 of 20

DATE Month Year	DOCKINGS		Hours in Home Port	Hours in Non-Home Port	Total Hours Under- way	Hours under- way within 3-mile limit	SORTIE CHARACTERISTICS (Estimated)						
	Home	Non-Home					TIME INTERVALS						
							HOLDING TIME INTERVALS (Hour)	TIME BEYOND RESTRICTED WATERS (Hour)					
12/1*					24.0								
12/2	x	x	20.1		3.9	3.9	0	1	3.9				
12/3*			24.0										
12/4	x	x	8.1		15.9	15.9	0	1	15.9				
12/5	x	x	7.1		16.9	16.9	0	1	16.9				
12/6-12/8*			72.0										
12/9	x	x	16.0		8.0	2.0 ⁽¹⁾	2	II b=1	1.0				
12/10	x		9.1		14.9	14.9	0	II b=2 C=1	14.9				
12/11					24.0	2.0	2		2.0, 5.3				
12/12	x		6.7		17.3	5.3	2		22.0, 12.0				
12/13-12/15*			72.0										
12/16	x	x	20.5		3.5	3.5	0	1	3.5				
12/17	x	x	9.3		14.7	8.7 ⁽¹⁾	2	II b=1	4.35				
12/18	x	x	7.7		16.3	16.3	0	1	16.3				
12/19	x	x	13.4		10.6	10.6	0	1	10.6				
12/20	x	x	15.7		8.3	6.3 ⁽¹⁾	2	II b=1	3.15				
12/21-12/23*			216.0						2.0				

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

DECEMBER 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS	UNDER- WAY	WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home						
12/30	X	X	17.0		7.0	7.0	0	1
12/31*			24.0					7.0

Sheet 8 of 20

TIME INTERVALS HOLDING TIME INTERVALS (Hours)	SOCIAL CHARACTERISTICS (Released)		
	TYPE	MAX	OTHERS (Hours)

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (1807)

JANUARY 1975

Sheet 9 of 20

DATE	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 2-MILE CROSSINGS	SOME CHARACTERISTICS (Refugee)		
	Home	Non-Home				HOLDING TIME INTERVALS (Hours)	TYPE	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
Month	Year	Arrival	Departure	MAX	OTHERS			
1/1-1/6*				144.0				
1/7	x	x		13.9	10.1	2.0(1)	2	III d=2
1/8		x		9.7	14.3	2.3(1)	2	o=1
1/9		x		24.0				1.0
1/10	x	x		7.9	16.1	7.1(1)	2	
1/11	x	x		10.5	13.5	5.5(1)	2	II b=1
1/12-1/14*				72.0				2.75
1/15	x	x		8.2	15.8	15.8	0	1
1/16	x	x		4.4	19.6	1.6(1)	2	II b=1
1/17	x	x		18.4	5.6	5.6	0	1
1/18-1/20*				72.0				5.6
1/21	x	x		18.0	6.0	6.0	0	1
1/22	x	x		15.1	8.9	8.9	0	1
1/23*				24.0				8.9
1/24	x	x		17.1	6.9	6.9	0	1
1/25-1/28*				96.0				6.9
1/29	x	x		23.5	0.5	0.5	0	1
								0.5

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

JANUARY 1975

DATE Month Year	DOCKINGS		HOURS IN NON-HOME PORT	HOURS IN NON-HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOUND CHARACTERISTICS (Estimate)	
	Home	Non-Home						Type	Max OtherS (Hours)
1/30	X	X			18.7		5.3	5.3	0
1/31*					24.0				

Sheet 10 of 20

DATE Month Year	DOCKINGS		HOURS IN NON-HOME PORT	HOURS IN NON-HOME PORT	TOTAL HOURS UNDER- WAY	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS	SOUND CHARACTERISTICS (Estimate)	
	Home	Non-Home						Type	Max OtherS (Hours)

*Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel — FIREBUSH (1807)

FEBRUARY 1975

Sheet 11 of 20

DOCKINGS			TOTAL HOURS UNDER WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Hours	Hours		
	Home	Non-Home		
DATE Month <u>2</u> Year <u>75</u>				
2/1-2/17*			408.0	
2/18	x	x	17.8	6.2
2/19-2/26*			192.0	
2/27	x	x	14.0	10.0
2/28	x	x	17.3	6.7

* Bravo Status
* Charlie Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

Sheet 12 of 20

DATE March Year	DOCKINGS		Hours IN HOME PORT	Hours IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	ROUTE CHARACTERISTICS (Estimated)			TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Home	Non-Home						HOLDING TIME INTERVALS (Hour)	TYPE	MAX	
	AM	PM									
3/1-3/3*					72.0				I	12.7	
3/4	x	x			11.3	12.7	0		II b=1	2.5	2.3
3/5	x	x			16.7	7.3	5.0(1)	2	II b=1	2.5	3.5
3/6	x	x			14.0	10.0	6.5(1)	2	II b=1	3.25	3.25
3/7-3/9*					72.0						
3/10	x	x			15.6	8.4	8.4	0	I	8.4	
3/11*					24.0						
3/12	x	x			17.1	6.9	6.9	0	I	6.9	
3/13-3/16*					96.0						
3/17	x	x			14.7	9.3	9.3	0	I	9.3	
3/18	x	x			18.0	6.0	6.0	0	I	6.0	
3/19	x	x			14.5	9.5	9.5	0	I	9.5	
3/20*					24.0						
3/21	x	x			11.0	3.0	10.0	0	I a=1	13.0	
3/22-3/23*					48.0						
3/24	x	x			17.9	6.1	6.1	0	I	6.1	
3/25*					24.0						

(1) Underway time within 3-mile limit split in half.

Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel Firebrush 1802

MARCH 1975

DATE Month Year	DOCKINGS		TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	TYPE	TIME INTERVALS	
	Home	Non-Home				HOURS IN HOME PORT	MAX
3/26	X	X	16.6	7.4	7.4	0	1
3/27*			24.0				
3/28	X	X	16.2	7.8	7.8	0	1
3/29-3/31*			72.0				

Sheet 17 of 20

TIME INTERVALS	SOLO CHARACTERISTICS (Released)	
	BEYOND RESTRICTED WATERS (Home)	MAX

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

APRIL 1975

Sheet 14 of 20

DATE Month <u>4</u> Year <u>75</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SOLITE CHARACTERISTICS (Excluded)			TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Home	Non-Home					TYPE	MAX	OTHERS	
4/1	x	x	14.5		9.5	9.5		1	9.5	
4/2-4/3*			48.0							
4/4	x		10.6		13.4	0.6	1	II b=1	0.9	0.6
4/5					24.0	0.0	0			99.3
4/6					24.0	0.0	0			
4/7					24.0	0.0	0			
4/8	x		8.6		15.4	0.9	1			
4/9			24.0							
4/10	x	x	14.4		9.6	9.6	0	1	9.6	
4/11-4/14*			96.0							
4/15	x	x	12.1		11.9	11.9	0	1	11.9	
4/16	x	x	12.7		11.3	11.3	0	1	11.3	
4/17	x	x			13.9	10.1	6.6(1) 2 b=1	II a=1	17.2	3.3
4/18-4/20	x		72.0							3.5
4/21	x	x	16.6		7.4	7.4	0	1	7.4	
4/22	x	x	15.3		8.7	1.7(2) 2		II b=1	0.85	0.85
4/23	x	x	16.9		7.1	7.1	0	1	7.1	

* Bravo Status

(1) Underway time within 3-mile limit split into 3.3, 1.65, 1.65 hours.

(2) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel. FIREBUSH (180')

APRIL 1975

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS WITHIN 3-MILE LIMIT
	Home	Non-Home					
4/24	x	x		10.0	14.0	1.0(1)	2
4/25	x	x		21.2	2.8	0.8(1)	2
4/26-4/28*				72.0			
4/29	x	x		16.5	7.5	7.5	0
4/30	x	x		15.0	9.0	3.0(1)	2

* Bravo Station

(1) Underway time within 3-mile limit shall be held.

Sheet 15 of 20

SOURCE CHARACTERISTICS (estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)		
TYPE	HOLDING TIME INTERVALS (Hours)	OTHERS		MAX
		MAX	OTHERS	
II b=1	0.5	0.5		13.0
II b=1	0.4	0.4		2.0
I	7.5			
II b=1	1.5	1.5		6.0

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

Sheet 16 of 20

MAY 1975

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON-HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SAILING CHARACTERISTICS (estimated)		
	Home	Non-Home						HOLDING TIME INTERVALS (Hours)	TYPE	MAX
5/1	x	x		15.8	8.2	8.2	0	1		8.2
5/2-5/4*				72.0				1		2.5
5/5	x	x		21.5	2.5	2.5	0	1		9.3
5/6	x	x		14.7	9.3	9.3	0	1		
5/7*				24.0				1		5.7
5/8	x	x		18.3	5.7	5.7	0	1		
5/9-5/11*				72.0				1		9.2
5/12	x	x		14.8	9.2	9.2	0	1		
5/13*				24.0				1		9.0
5/14	x	x		15.0	9.0	9.0	0	1		
5/15-5/18*				96.0				1		4.9
5/19	x	x		19.1	4.9	4.9	0	1		
5/20*				24.0				1		
5/21	x	x		16.7	7.3	7.3	0	1		7.3
5/22-5/26				120.0				11 to 1		7.15
5/27	x	x		8.7	15.3	14.3(1)	2			1.0
5/28	x	x		14.5	9.5	9.5	0	1		9.5

(1) Underway time within 3-mile limit split in half.

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

MAY 1975

Sheet 17 of 20

SOUTIE CHARACTERISTICS (Estimated)		TIME INTERVALS		BEYOND RESTRICTED WATERS (Hours)	
TYPE	HOLDING TIME INTERVALS (Hours)	OTHERS		MAX	
		MAX	OTHERS		
I	8.1				

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel MENASH (1807)

JUNE 1975

Sheet 18 of 20

(1) Repair in Caddell Ship Yard (Use municipal sewage system)

DETAILED VESSEL MISSION PROFILE DATA

Vessel FIREBUSH (180')

JULY 1975

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 2-MILE LIMIT	NUMBER OF 2-MILE CROSSINGS	ROUTE CHARACTERISTICS (continued)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	ARRIVAL	DEPARTURE						MAX	OTHERS	
7/1-7/2*	x	(2)			48.0 ⁽²⁾			1	1.0	
7/3	x	x	23.0		1.0	1.0	0			
7/4-7/7*			96.0							
7/8	x	x	5.2		18.8	4.0 ⁽¹⁾	2	II b=1	2.0	14.8
7/9	x	x	8.8		15.2	3.2 ⁽¹⁾	2	II b=1	1.6	12.0
7/10	x	x	11.4		12.6	12.6	0	1	12.6	
7/11	x		12.6		11.4	11.4	0	I a=1	54.0	
7/12			24.0							
7/13	x		18.0		6.0	6.0	0			
7/14*			24.0							
7/15	x	x	x	x	11.0	13.0	0	I a=1	30.2	
7/16	x		17.8		6.2	6.2	0			
7/17-7/20*			96.0							
7/21	x	x	13.6		10.4	10.4	0	1	10.4	
7/22	x	x	17.4		6.6	6.6	0	1	6.6	
7/23	x	x	16.2		7.8	7.8	0	1	7.8	
7/24	x	x	15.5		8.5	8.5	0	1	8.5	

* Bravo Status

(1) Underway time within 3 - 11 unit split in half.

(2) Repair in Caddell Ship Yard (use municipal sewage system)

DETAILED VESSEL MISSION PROFILE DATA

vessel FIREBUSH (180')

July 1975

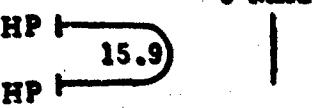
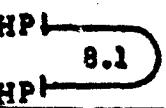
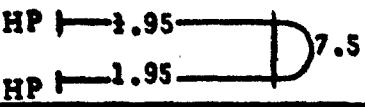
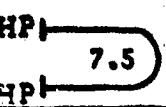
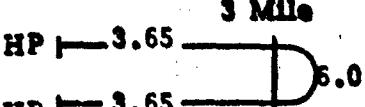
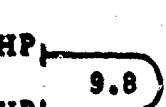
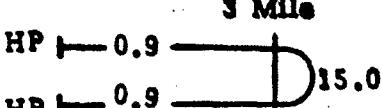
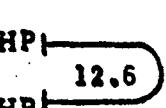
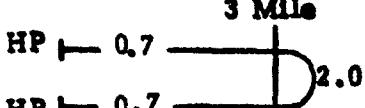
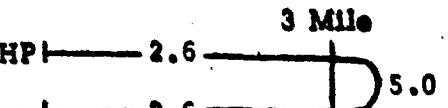
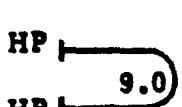
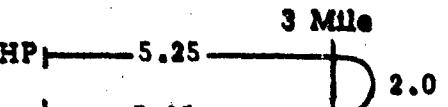
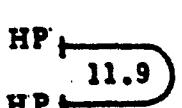
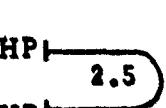
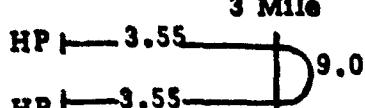
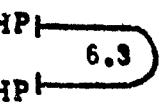
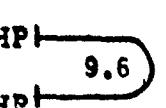
Sheet 20 of 20

Bravo Status

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel PIREBUSH (180')

Sheet 1 of 7

8/1/74	3 Mile 	9/5/74	3 Mile 
8/3/74	3 Mile 	9/9/74	3 Mile 
8/7/74	3 Mile 	9/10/74	3 Mile 
8/8/74	3 Mile 	9/12/74	3 Mile 
8/9/74	3 Mile 	9/16/74	3 Mile 
8/13/74	3 Mile 	9/18/76	3 Mile 
8/14/74	3 Mile 	9/19/74	3 Mile 
9/4/74	3 Mile 	9/23/74	3 Mile 
		9/26/74	3 Mile 

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

Sheet 2 of 7

10/1/74	3 Mile	10/19/74-10/20/74 HP — 2.0 3 Mile 20.0
	HP — 9.2	2.0 1.0 16.0
10/5/74-10/18/74	3 Mile	10/23/74
	HP — .5	3 Mile
	.5	HP — 11.1
	0.5	HP —
	8.0	
	8.0	
	20.4	
	9.8	
	9.8	
	2.1	
	2.1	
	10.0	
	24.0	
	2.6	
	21.4	
	7.7	
	2.1	
	16.3	
	7.1	
	21.4	
	16.9	
	7.7	
	16.3	
	7.1	
	16.9	
	7.6	
	4.1	
	16.4	
	19.9	
	4.1	
	24.0	
	19.9	
	24.0	
	24.0	
	7.4	
	16.6	
	5.6	
	18.4	
	24.0	
	11.8	
	277.9	
	HP — 11.8	

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

Sheet 3 of 7

11/23/74	3 Mile	12/17/74	3 Mile
HP 13.2		HP 4.35	
HP		HP 4.35	
11/25/74	3 Mile	12/18/74	3 Mile
HP 7.2		HP 16.3	
HP		HP	
12/2/74	3 Mile	12/19/74	3 Mile
HP 3.9		HP 10.6	
HP		HP	
12/4/74	3 Mile	12/20/74	3 Mile
HP 15.9		HP 3.15	
HP		HP 3.15	
12/5/74	3 Mile	12/30/74	3 Mile
HP 16.9		HP 7.0	
HP		HP	
12/9/74	3 Mile	1/7/75	3 Mile NHP
HP 1.0		HP 1.0	8.1
HP 1.0	6.0	1.0	13.9
		12.0	23.6
12/10/74	3 Mile	HP 3.55	9.7
HP 14.9	22.0	1.65	
	(2.0)	1.65	
HP -- 5.3	12.0	9.0	24
12/16/74	3 Mile	1/11/75	3 Mile
HP 3.5		HP 2.75	
HP		HP 2.75	
			8.0
		1/15/75	3 Mile
		HP 15.8	
		HP	

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

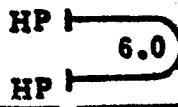
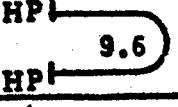
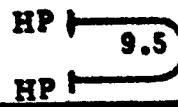
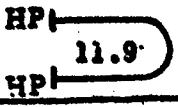
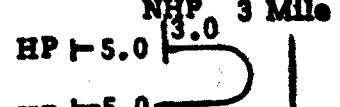
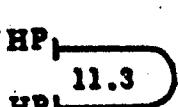
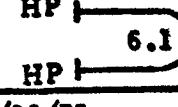
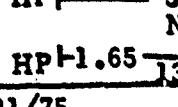
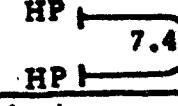
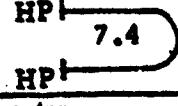
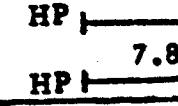
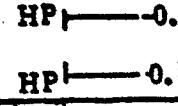
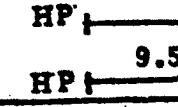
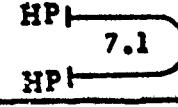
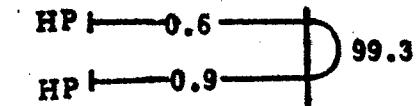
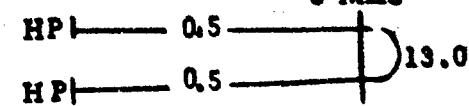
Sheet 4 of 7

1/16/75	3 Mile HP 0.8 18.0 HP 0.8	2/27/75 3 Mile HP 10.0 HP
1/17/75	3 Mile HP 5.6 HP	2/28/75 3 Mile HP 6.7 HP
1/21/75	3 Mile HP 6.0 HP	3/4/75 3 Mile HP 12.7
1/22/75	3 Mile HP 8.9 HP	3/5/75 3 Mile HP 2.5 2.3 HP 2.5
1/24/75	3 Mile HP 6.9 HP	3/6/75 3 Mile HP 3.25 3.5 HP 3.25
1/29/75	3 Mile HP 0.5 HP	3/10/75 3 Mile HP 8.4 HP
1/30/75	3 Mile HP 5.3 HP	3/12/75 3 Mile HP 6.9
2/18/75	3 Mile HP 6.2 HP	3/17/75 3 Mile HP 9.3

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

Sheet 5 of 7

3/18/75		3 Mile	4/10/75		3 Mile
3/19/75		3 Mile	4/15/75		3 Mile
3/21/75		NHP 3 Mile HP 5.0 3.0 HP 5.0	4/16/75		3 Mile
3/24/75		3 Mile	4/17/75		3 Mile
3/26/75		3 Mile	4/21/75		3 Mile
3/28/75		3 Mile	4/22/75		3 Mile
4/1/75		3 Mile	4/23/75		3 Mile
4/4/75-4/8/75		3 Mile HP 0.6 NHP 99.3 HP 0.9	4/24/75		3 Mile HP 0.5 NHP 19.0 HP 0.5

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

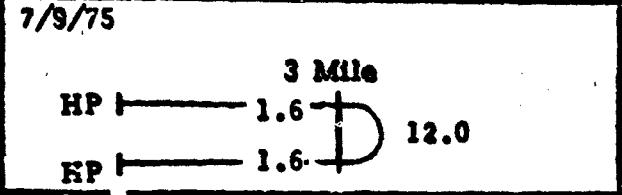
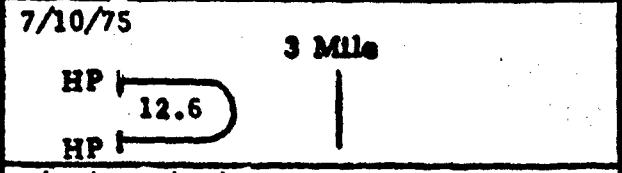
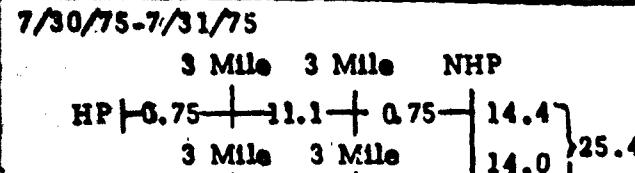
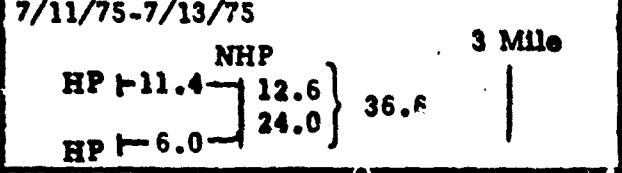
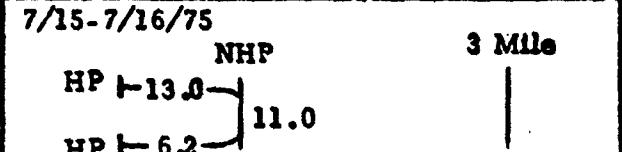
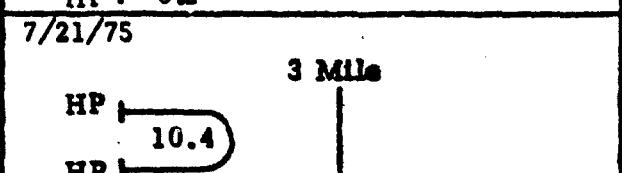
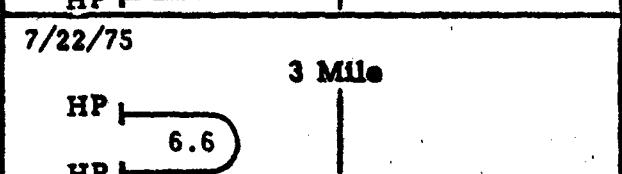
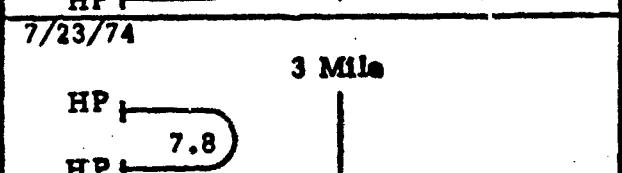
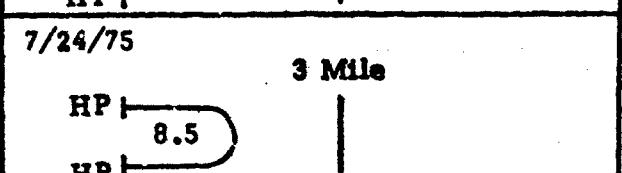
Sheet 6 of 7

4/25/75	3 Mile	5/14/75	3 Mile
HP ———— 0.4 ———— 2.0		HP ———— 9.0	
HP ———— C.4 ————		HP ————	
4/29/75	3 Mile	5/19/75	3 Mile
HP ———— 7.5		HP ———— 4.9	
HP ————		HP ————	
4/30/75	3 Mile	5/21/75	3 Mile
HP ———— 1.5 ———— 6.0		HP ———— 7.3	
HP ———— 1.5 ————		HP ————	
5/1/75	3 Mile	5/27/75	3 Mile
HP ————		HP ———— 7.15 ———— 1.0	
HP ———— 8.2 ————		HP ———— 7.15 ————	
5/5/75	3 Mile	5/28/75	3 Mile
HP ———— 2.5 ————		HP ———— 9.5	
HP ————		HP ————	
5/6/75	3 Mile	5/29/75	3 Mile
HP ———— 9.3 ————		HP ———— 8.1	
HP ————		HP ————	
5/8/75	3 Mile	7/3/75	3 Mile
HP ———— 5.7 ————		HP ———— 1.0	
HP ————		HP ————	
5/12/75	3 Mile	7/9/75	3 Mile
HP ———— 9.2 ————		HP ———— 2.0 ———— 14.8	
HP ————		HP ———— 2.0 ————	

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel FIREBUSH (180')

Sheet 7 of 7

7/9/75 	7/29/75 
7/10/75 	7/30/75-7/31/75 
7/11/75-7/13/75 	
7/15-7/16/75 	
7/21/75 	
7/22/75 	
7/23/74 	
7/24/75 	

PAMLICO (160')
Based on Data from
SHADBUSH (74')
CLAMP (75')

Vessel Characteristic	Data for PAMLICO (160')	Data for SHADBUSH (74')	Data for CLAMP (75')
Class	WLIC - 800	WLI - 74287 Clematic (74') Class	WLIC - 75306 Clamp (75') Class
Type	Buoy Tender (Inland)	Construction Tender (Inland)	Buoy Tender (Coastal)
Crew Size	13	9	9
Home Port	New Construction (Intended for Operation in Depot Corpus, Texas)	New Orleans, La. (Transferred to Galveston, Texas)	Galveston, Texas (Transferred to New Orleans, La.)
Mission Profile Data Source and Time Interval	Represented by data from SHADBUSH and CLAMP <u>7 Months</u> <u>6/1/74-10/31/75</u>	From Summary Log <u>15 Months</u> <u>6/1/74-8/21/75</u>	From Summary Log <u>2 Months</u> <u>8/2/75-10/31/75</u>

SUMMARY OF MISSION PROFILE CHARACTERISTICS

Vessels SHADBUSH (74') and CLAMP (75')

(One Year Average based on data from

SHADBUSH (74') - June 1974-August 1975
CLAMP (75') - August 1975-October 1975)(1)

} Used as
models for
PAMLICO (160')
new construction
vessel

SHADBUSH (74') & CLAMP (75')(1)

Estimates for PAMLICO (160')(2)

% of time in home port (6273.3 hours)---71.6	(6024.7 hours)--- 68.9
% of time underway (2486.7 hours) ---28.4	(2735.3 hours)--- 31.1
% of time within 0-3 mile limit (2486.7 hours)---28.4	(2735.3 hours)--- 31.1
% of underway time outside restricted waters (0 hours)--- 0.0	(0.0 hours)--- 0.0
% of underway time within 0-3 mile limit ()--- 100.0	()---100.0
Number of 3 mile crossings ----- 0	----- 0
Number of home port dockings ----- 64	----- 64
Number of non-home port dockings ----- 0	----- 0
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non- home port-----2471.1	-----2718.1
% of time spent within 0-3 mile limit and/or in non-home port ----- 28.2	----- 31.0
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port-----456	----- 501
Maximum continuous number of hours outside restricted waters----- 0	----- 0

NOTES:

- (1) Combined data from SHADBUSH and CLAMP (12-month average based on 17 months data).
- (2) Estimated data for PAMLICO (10% increase in underway time).

HOLDING TIMES

Vessels SHADBUSH ('74) - (June 1974-August 1975), CLAMP ('75) - (August 1975-October 1975)
Used as model for PAMlico (160') new construction vessel

Holding time continues into next month

Maximum holding times for sorties

All other sortie holding times

PAMLICO (160")

HOLDING TIMES*

FREQUENCY TABLE

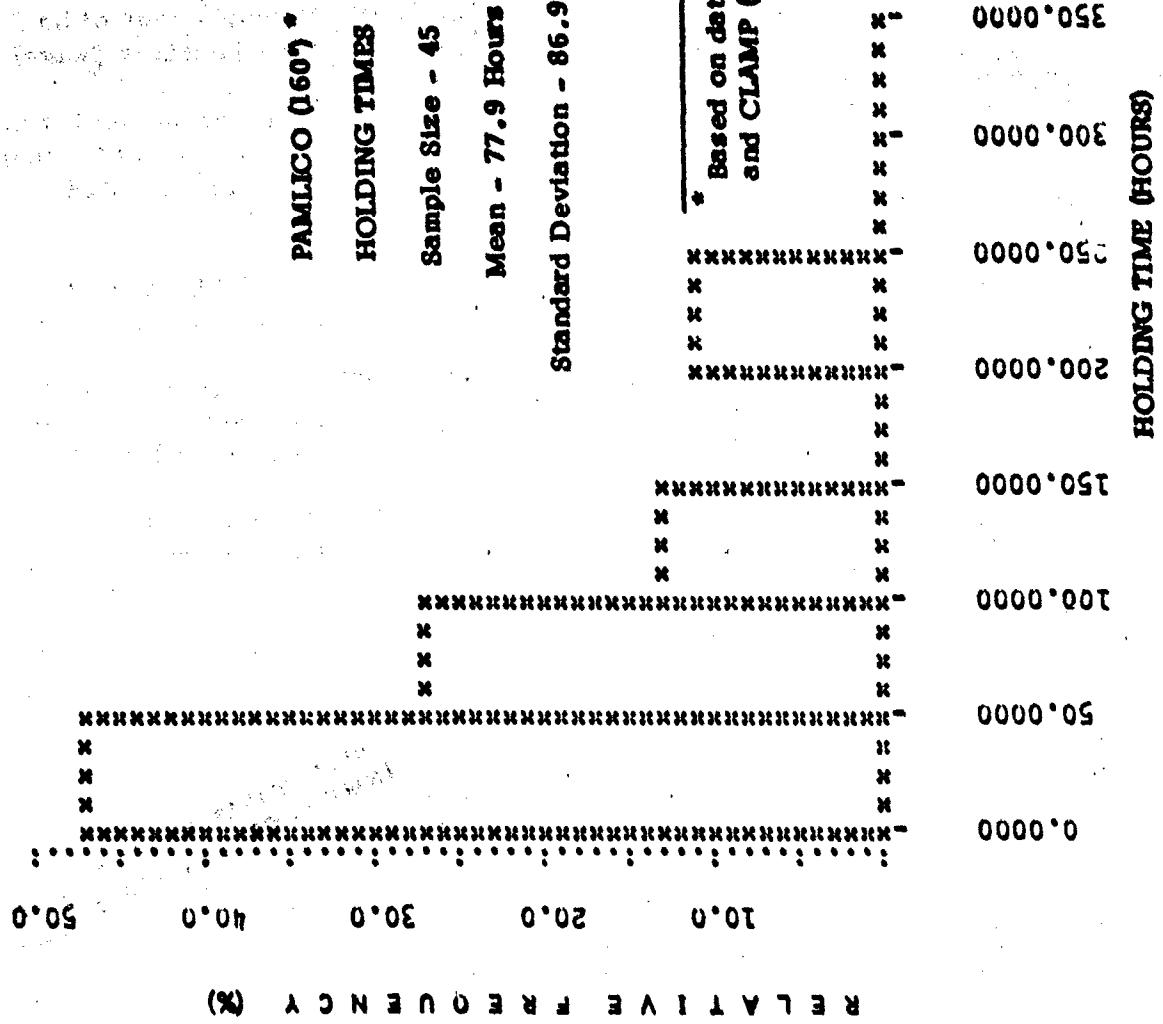
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5.0000	2	.44	4	.89
8.0000	2	.44	6	13.33
10.0000	3	.67	9	20.00
11.0000	1	.22	10	22.22
14.0000	2	.44	12	26.67
15.0000	1	.22	13	28.89
16.0000	2	.44	15	33.33
20.0000	1	.22	16	35.56
22.0000	1	.22	17	37.78
33.0000	1	.22	18	40.00
35.0000	1	.22	19	42.22
40.0000	1	.22	20	44.44
47.0000	1	.22	21	46.67
53.0000	1	.22	22	49.89
61.0000	2	.44	24	53.33
73.0000	1	.22	25	55.56
74.0000	1	.22	26	57.78
76.0000	1	.22	27	60.00
78.0000	1	.22	28	62.22
82.0000	1	.22	29	64.44
83.0000	1	.22	30	66.67
89.0000	1	.22	31	68.89
91.0000	1	.22	32	71.11
99.0000	1	.22	33	73.33
103.0000	1	.22	34	75.56
109.0000	1	.22	35	77.78
110.0000	1	.22	36	80.00
119.0000	1	.22	37	82.22
133.0000	1	.22	38	84.44
134.0000	1	.22	39	86.67
202.0000	1	.22	40	88.89
208.0000	1	.22	41	91.11
216.0000	1	.22	42	93.33
222.0000	1	.22	43	95.56
228.0000	1	.22	44	97.78
456.0000	1	.22	45	100.00

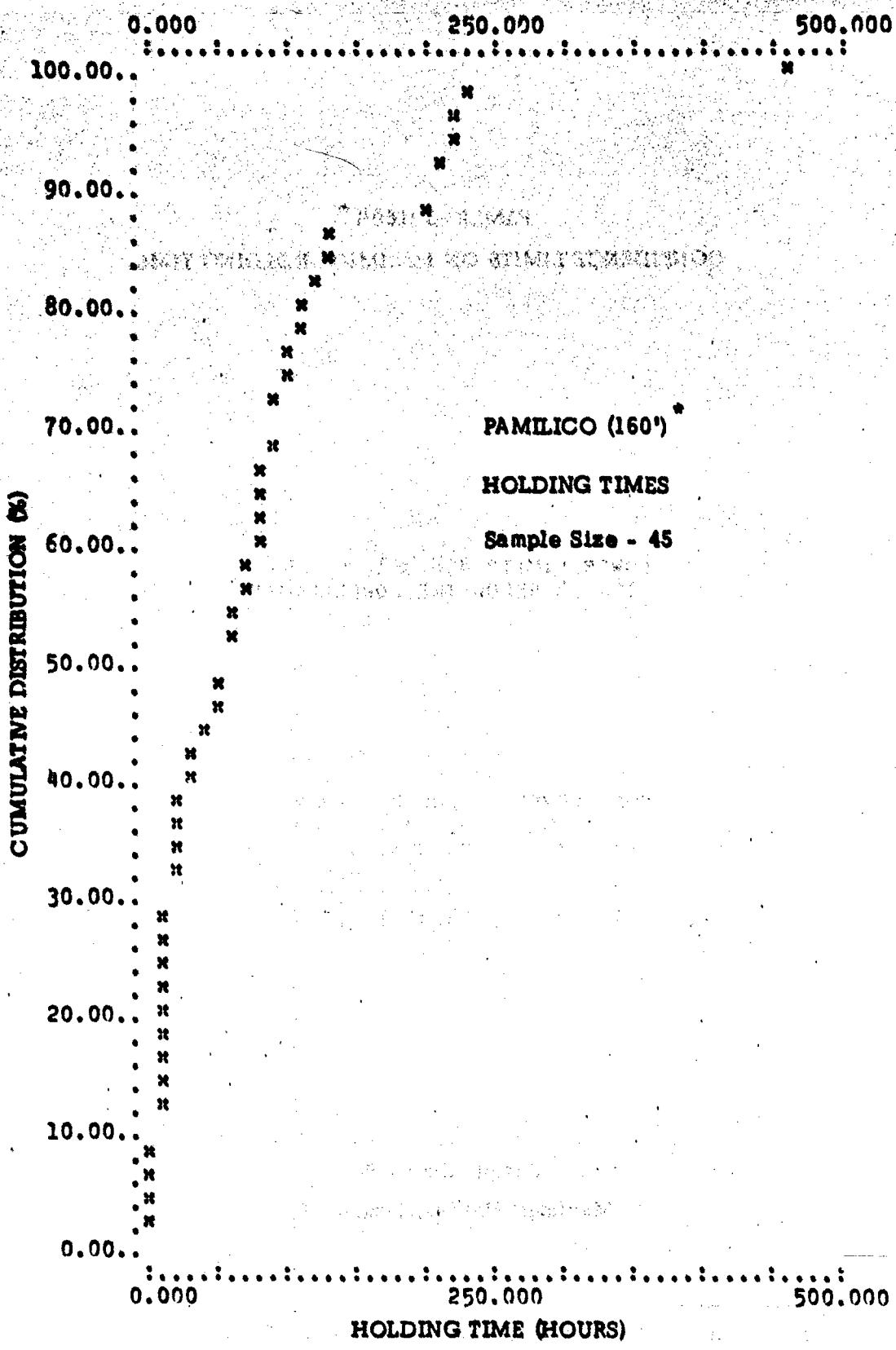
NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less

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* Based on data from SHADBUSH (74') and CLAMP (75')





* Based on data from SHADBUSH (74') and CLAMP (75')

PAMLICO (160')
CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

LOWER LIMIT 456.001
100 % BELOW THE LOWER LIMIT

CONF LEVEL	LOWER	UPPER
50	97.00	100.00
75	95.50	100.00
90	93.60	100.00
95	92.20	100.00
99	88.90	100.00

Sample Size - 56
Maximum Holding Time - 456

* Based on data for SHADBUSH (74') and CLAMP (75')

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

JUNE 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	TIME INTERVALS BEYOND RESTRICTED WATERS	SORTIE CHARACTERISTICS (Estimated)	
	Home	Non-Home						MAX	OTHER
6/1-6/18*					432.0				
6/19	x			14.0	10.0	10.0	0	1	61.0
6/20						24.0	24.0	0	
6/21						24.0	24.0	0	
6/22	x			21.0	3.0	3.0	0		
6/23-6/25*				72.0					
6/26	x			15.0	9.0	9.0	0	1	33.0
6/27						24.0	24.0	0	
6/28-6/30**	x			72.0					

Sheet 1 of 15

* Bravo Status

** Used as model for PAMLICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel — SHADBUSH (74')**

TULX 1974

Sheet 2 of 15

* Bravo Status

* Used as model for PAMlico (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74') **

Sheet 3 of 15

AUGUST 1974		DOCKINGS		HOURS IN HOME PORT		HOURS IN NON-HOME PORT		TOTAL HOURS UNDER WAY		HOURS UNDER WAY WITHIN 3-MILE LIMIT		NUMBER OF 3-MILE CROSSINGS		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)		SOUTHE CHARACTERISTICS (Estimated)	
DATE	Month Year	Home Departure	Non-Home Arrival	Departure	Arrival	Home	Port	Under Way	Within 3-Mile Limit	Type	Max	Others	MAX	TIME INTERVALS (Hours)	Beyond Restricted Waters (Hours)	SOUCHE CHARACTERISTICS (Estimated)	
8/1-8/5*	Month 8 Year 74					120.0					1		47.0				
8/6		x				15.0		9.0	9.0	0							
8/7								24.0	24.0	0							
8/8		x				10.0		14.0	14.0	0							
8/9-8/19*				264.0													
8/20		x				9.0		15.0	15.0	0	1		222.0				
8/21-8/28*								192.0	192.0	0							
8/29		x				9.0		15.0	15.0	0							
8/30-8/31*				48.0													

DETAILED VESSEL MISSION PROFILE DATA

Vernon Spanish (74)

Sheet 4 of 15

DOCKINGS		HOURS IN HOME PORT		HOURS IN NON-HOME PORT		TOTAL HOURS		UNDER WAY		NUMBER OF 2-MILE CROSSINGS	
DATE	Home	Non-Home	Home	Non-Home	Port			Within 2-mile limit	Way	Under Way	
Month <u>9</u>	Departure	Arrival									
Year <u>74</u>	Arrival	Departure									
9/1-9/9*						216.0					
9/10	x					10.0			14.0	14.0	0
9/11-9/12									48.0	48.0	0
9/13	x					3.0			21.0	21.0	0
9/14-9/22*						216.0					
9/23	x					10.0			14.0	14.0	0
9/24-9/26									72.0	72.0	0
9/27	x					7.0			17.0	17.0	0
9/28-9/30*									72.0		

ROUTE CHARACTERISTICS (estimated)		TIME INTERVALS	
TYPE	HOLDING TIME INTERVALS (Hours)	BEYOND RESTRICTED WATERS (hours)	
		MAX	OTHERS
I	83.0		
I	103.0		

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*# Used as model for PAMlico (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

OCTOBER 1974

DATE Month 10 Year 74	DOCKINGS		HOURS IN HOME PORT	HOURS NON- HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	ROUTE CHARACTERISTICS (estimated)		
	Home	Non-Home					HOURS TYPE	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	MAX OTHERS (Hours)
10/1-10/6*					144.0				
10/7	x			9.0	15.0	15.0	0	1	35.0
10/8	x			4.0	20.0	20.0	0		
10/9**				24.0					
10/10	x	x		14.0	10.0	10.0	0	1	10.0
10/11-10/13*				72.0					
10/14	x			10.0	14.0	14.0	0	1	91.0
10/15-10/17					72.0	72.0	0		
10/18	x			19.0	5.0	5.0	0		
10/19-10/21*				72.0					
10/22	x			11.0	13.0	13.0	0	1	82.0
10/23-10/24					48.0	48.0	0		
10/25	x			3.0	21.0	21.0	0		
10/26-10/31				144.0					

* Bravo Status

** Used as model for PAMILICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

Sheet 6 of 15

DATE Month <u>11</u> Year <u>74</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS	UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SCOUT CHARACTERISTICS (Estimated)		
	Home	Non-Home						HOLDING TIME INTERVALS (hours)	TYPE	MAX
11/1-11/4*			96.0							
11/5	x		7.0		17.0	17.0	0			
11/6-11/12					168.0	168.0	0			
11/13	x		1.0		23.0	23.0	0			
11/14-11/18*			120.0							
11/19	x		9.0		15.0	15.0	0			
11/20-11/22					72.0	72.0	0			
11/23	x		12.0		12.0	12.0	0			
11/24-11/30*			168.0							

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** Used as a model for PAMILICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel — SEADRAWISH (2A') **

DECEMBER 1974

Sheet 7 of 15

* Bravo Status

Charlie Status

* Used as a model for PAMICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

Sheet 8 of 15

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 2-MILE CROSSINGS	SOLUTE CHARACTERISTICS (estimated)			TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Home	Non-Home						Type	MAX	OTHERS	
1/1-1/5*			120.0								
1/6*			24.0								
1/7	x		13.0		11.0	11.0	0				
1/8-1/15					192.0	192.0	0				
1/16	x		11.0		13.0	13.0	0				
1/17-1/21*			120.0								
1/22	x		7.0		17.0	17.0	0				
1/23-1/24					48.0	48.0	0				
1/25	x		16.0		8.0	8.0	0				
1/26*			24.0								
1/27	x	x	10.0		14.0	14.0	0		14.0		
1/28	x	x	2.0		22.0	22.0	0		22.0		
1/29*			24.0								
1/30	x	x	19.0		5.0	5.0	0		5.0		
1/31*					24.0						

* Bravo Status

** Used as model for PAMILICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

FEBRUARY 1975

DATE Month Year	DOCMENTS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOLUTE CHARACTERISTICS (estimated)		
	Home	Away						HOLDING TIME INTERVALS (Hours)	TYPE	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Departure	Arrival						MAX	OTHERS	
2/1-2/2*			48.0							
2/3	x		11.0		13.0	13.0	0	1	40.0	
2/4					24.0	24.0	0			
2/5	x		21.0		3.0	3.0	0			
2/6-2/12*			168.0							
2/13	x	x	20.0		4.0	4.0	0	1	4.0	
2/14-2/16*			72.0							
2/17	x		9.0		15.0	15.0	0	1	110.0	
2/18-2/20					72.0	72.0	0			
2/21	x		1.0		23.0	23.0	0			
2/22-2/24*			72.0							
2/25	x	x	16.0		8.0	8.0	0	1	8.0	
2/26	x	x	4.0		20.0	20.0	0	1	20.0	
2/27-2/28*			48.0							

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** Used as a model for PAMICO (160') new construction vessel

PENALIZED MISSING PROPHET DATA

Vessel — SHADBUSH (74) *

MARCH 1975

Page 10 of 15

* Bravo Status
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LITERATURE OF THE AMERICAN RENAISSANCE

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74) "

APRIL 1975

DOCKINGS

Home Non-Home

Hours Hours

IN HOME HOME

PORT PORT

HOURS

IN HOME

PORT

HOURS

Sheet 11 of 15

DATE Month Year	ROUTE CHARACTERISTICS (estimated)			TIME INTERVALS BEYOND RESTRICTED WATERS (short)
	HOLDING TIME INTERVALS (Hours)	TYPE	MAX OTHERS	
4/1			
4/2	3.0			
4/3-4/7*	120.0			
4/8	8.0			
4/9-4/11			16.0	0
4/12	23.0		72.0	72.0
4/13-4/16*	96.0		1.0	0
4/17	8.0		16.0	0
4/18-4/20*	72.0			
4/21	2.0		22.0	22.0
4/22*	24.0			
4/23-4/30*	192.0			

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** Used as a model for PAMICO (160) new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADABUSH (74') **

MAY 1975

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Sheet 12 of 15

DATE	DOCKINGS		Hours in Home Port	Hours in Non- Home Port	Total Hours Under- Way	Under- way within 3-mile limit	Number of 3-mile crossings
	Home	Non-Home					
	Arrival	Departure					
5/1-5/4#			96.0				
5/5-5/8#			24.0				
5/6	x		8.0				
5/7-5/10					16.0	16.0	0
5/11	x				2.0	22.0	0
5/12-5/19*					192.0		
5/20.	x				8.0	16.0	0
5/21-5/22						48.0	48.0
5/23	x				10.0	14.0	0
5/24-5/31*					192.0		

* Bravo Status

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** Used as a model for PAMlico (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADRIJSH (74') **

MAY 1975

DATE Month Year	DOCKINGS		Hours in Home Port	Hours in Non- Home Port	Total hours under- way	Under- way within 3-mile limit	Number of 3-mile crossings
	Home	Non-Home					
	Arrival	Departure					
6/1-6/15*			360.0				
6/16	x		8.0		16.0	16.0	0
6/17-6/24					192.0	192.0	0
6/25	x		4.0		20.0	20.0	0
6/26-6/30*			120.0				

Sheet 13 of 15

* Bravo Status

* Bravo Status *** Used as a model for PAMLICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74')**

JULY 1975

DATE Month Year	DOCKINGS Home Non-Home	HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOUSRS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	TYPE	MAX	OTHERS
7/1-7/2				48.0					
7/3	x x		14.0	10.0	10.0	0		1	10.0
7/4-7/8*			120.0						
7/9	x x		16.0	8.0	8.0	0		1	8.0
7/10-7/14*			120.0						
7/15	x x		8.0	16.0	16.0	0		1	16.0
7/16	x x		9.0	15.0	15.0	0		1	15.0
7/17-7/21*			120.0						
7/22	x		8.0	16.0	16.0	0		1	76.0
7/23-7/24					48.0	48.0			
7/25	x			12.0	12.0	12.0			
7/26-7/31*				144.0					

Sheet 14 of 15

* Bravo Status

** Used as a model for PAMICO (160') new construction vessel

DETAILED VESSEL MISSION PROFILE DATA

Vessel SHADBUSH (74') **

AUGUST 1975

DOCKINGS

DATE Month <u>8</u> Year <u>75</u>	Home		Non-Home		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	TYPE	MAX	OTHERS	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
	Arrival	Departure	Arrival	Departure											
8/1-8/10**					240.0										
8/11	X	X			14.0		10.0	10.0	0	1	10.0				
8/12	X	X			10.0		14.0	14.0	0	1	14.0				
8/13-8/21*					216.0										

Sheet 15 of 15

SORTIE CHARACTERISTICS (estimated)									
HOLDING TIME		TIME INTERVALS		TIME INTERVALS		TIME INTERVALS		TIME INTERVALS	
INTERVALS		INTERVALS		INTERVALS		INTERVALS		INTERVALS	
(Hours)		(Hours)		(Hours)		(Hours)		(Hours)	

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel SHADBUSH (74')

Sheet 1 of 4

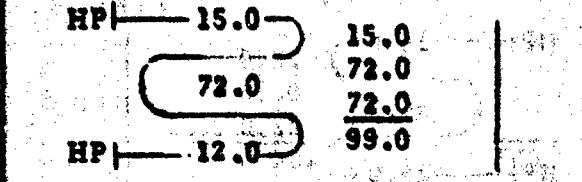
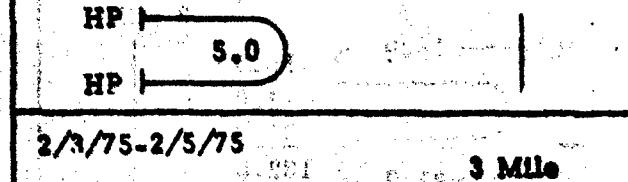
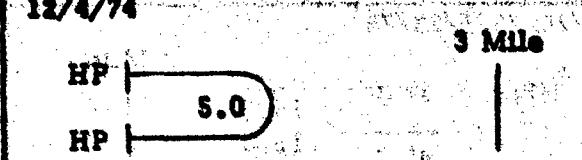
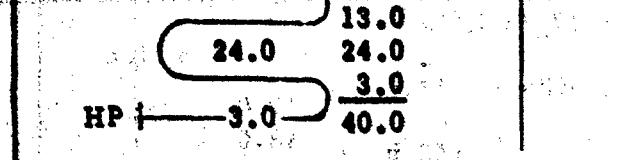
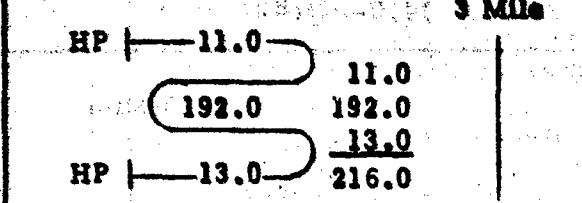
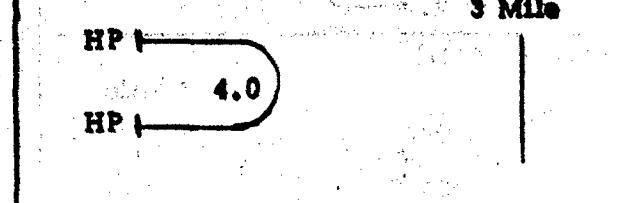
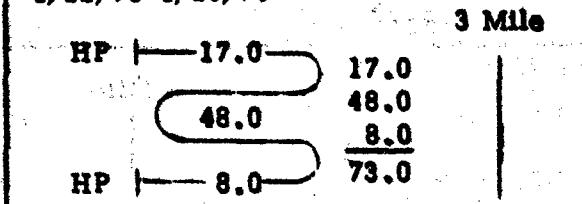
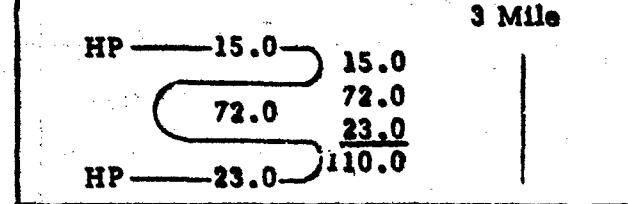
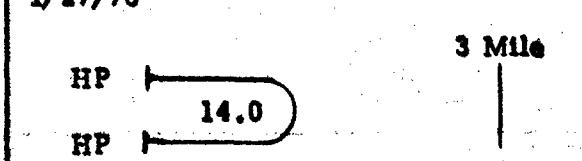
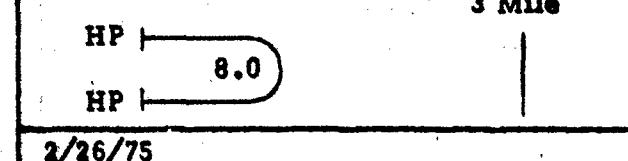
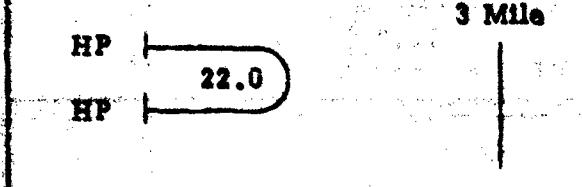
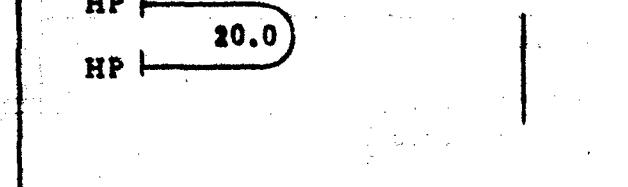
<p>6/19/74 - 6/22/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 10.0 —</td> <td></td> </tr> <tr> <td></td> <td>24.0</td> <td>61.0</td> </tr> <tr> <td></td> <td>24.0</td> <td></td> </tr> <tr> <td>HP </td> <td>— 3.0 —</td> <td></td> </tr> </table>	HP	— 10.0 —			24.0	61.0		24.0		HP	— 3.0 —		<p>9/23/74-9/27/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 14.0 —</td> <td>14.0</td> </tr> <tr> <td></td> <td>72.0</td> <td>72.0</td> </tr> <tr> <td></td> <td>17.0</td> <td>17.0</td> </tr> <tr> <td>HP </td> <td>— 17.0 —</td> <td>103.0</td> </tr> </table>	HP	— 14.0 —	14.0		72.0	72.0		17.0	17.0	HP	— 17.0 —	103.0
HP	— 10.0 —																								
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HP	— 3.0 —																								
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	72.0	72.0																							
	17.0	17.0																							
HP	— 17.0 —	103.0																							
<p>6/26/74-6/30/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 9.0 —</td> <td></td> </tr> <tr> <td></td> <td>33.0</td> <td></td> </tr> <tr> <td>HP </td> <td>— 24.0 —</td> <td></td> </tr> </table>	HP	— 9.0 —			33.0		HP	— 24.0 —		<p>10/7/74-10/8/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 15.0 —</td> <td>15.0</td> </tr> <tr> <td></td> <td>20.0</td> <td>20.0</td> </tr> <tr> <td>HP </td> <td>— 20.0 —</td> <td>35.0</td> </tr> </table>	HP	— 15.0 —	15.0		20.0	20.0	HP	— 20.0 —	35.0						
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<p>7/9/74-7/30/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 456.0 —</td> <td></td> </tr> <tr> <td>HP </td> <td>— 456.0 —</td> <td></td> </tr> </table>	HP	— 456.0 —		HP	— 456.0 —		<p>10/10/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 10.0 —</td> <td></td> </tr> <tr> <td>HP </td> <td>— 10.0 —</td> <td></td> </tr> </table>	HP	— 10.0 —		HP	— 10.0 —													
HP	— 456.0 —																								
HP	— 456.0 —																								
HP	— 10.0 —																								
HP	— 10.0 —																								
<p>7/31/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 11.0 —</td> <td></td> </tr> <tr> <td>HP </td> <td>— 11.0 —</td> <td></td> </tr> </table>	HP	— 11.0 —		HP	— 11.0 —		<p>10/14 - 10/18/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 14.0 —</td> <td>14.0</td> </tr> <tr> <td></td> <td>72.0</td> <td>72.0</td> </tr> <tr> <td>HP </td> <td>— 5.0 —</td> <td>5.0</td> </tr> <tr> <td></td> <td>91.0</td> <td></td> </tr> </table>	HP	— 14.0 —	14.0		72.0	72.0	HP	— 5.0 —	5.0		91.0							
HP	— 11.0 —																								
HP	— 11.0 —																								
HP	— 14.0 —	14.0																							
	72.0	72.0																							
HP	— 5.0 —	5.0																							
	91.0																								
<p>8/6/74-8/8/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 9.0 —</td> <td></td> </tr> <tr> <td></td> <td>24.0</td> <td>47.0</td> </tr> <tr> <td>HP </td> <td>— 14.0 —</td> <td></td> </tr> </table>	HP	— 9.0 —			24.0	47.0	HP	— 14.0 —		<p>10/22 - 10/25/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 13.0 —</td> <td>13.0</td> </tr> <tr> <td></td> <td>48.0</td> <td>48.0</td> </tr> <tr> <td>HP </td> <td>— 21.0 —</td> <td>21.0</td> </tr> <tr> <td></td> <td>82.0</td> <td></td> </tr> </table>	HP	— 13.0 —	13.0		48.0	48.0	HP	— 21.0 —	21.0		82.0				
HP	— 9.0 —																								
	24.0	47.0																							
HP	— 14.0 —																								
HP	— 13.0 —	13.0																							
	48.0	48.0																							
HP	— 21.0 —	21.0																							
	82.0																								
<p>8/20/74-8/29/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 15.0 —</td> <td></td> </tr> <tr> <td></td> <td>192.0</td> <td>222.0</td> </tr> <tr> <td>HP </td> <td>— 15.0 —</td> <td></td> </tr> </table>	HP	— 15.0 —			192.0	222.0	HP	— 15.0 —		<p>11/5/74-11/13/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 13.0 —</td> <td>17.0</td> </tr> <tr> <td></td> <td>168.0</td> <td>168.0</td> </tr> <tr> <td>HP </td> <td>— 23.0 —</td> <td>23.0</td> </tr> <tr> <td></td> <td>208.0</td> <td></td> </tr> </table>	HP	— 13.0 —	17.0		168.0	168.0	HP	— 23.0 —	23.0		208.0				
HP	— 15.0 —																								
	192.0	222.0																							
HP	— 15.0 —																								
HP	— 13.0 —	17.0																							
	168.0	168.0																							
HP	— 23.0 —	23.0																							
	208.0																								
<p>9/10/74-9/13/74</p> <p align="center">3 Mile</p> <table border="0"> <tr> <td>HP </td> <td>— 14.0 —</td> <td>14.0</td> </tr> <tr> <td></td> <td>48.0</td> <td>48.0</td> </tr> <tr> <td>HP </td> <td>— 21.0 —</td> <td>21.0</td> </tr> <tr> <td></td> <td>83.0</td> <td></td> </tr> </table>	HP	— 14.0 —	14.0		48.0	48.0	HP	— 21.0 —	21.0		83.0														
HP	— 14.0 —	14.0																							
	48.0	48.0																							
HP	— 21.0 —	21.0																							
	83.0																								

* Used as model for PAMILICO (160') new construction vessel.

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel SHADBUSH (74')*

Sheet 2 of 4

11/19/74 - 11/23/74 3 Mile 	1/30/75 3 Mile 
12/4/74 3 Mile 	2/3/75-2/5/75 3 Mile 
1/7/75-1/16/75 3 Mile 	2/13/75 3 Mile 
1/22/75-1/25/75 3 Mile 	2/17/75 - 2/21/75 3 Mile 
1/27/75 3 Mile 	2/25/75 3 Mile 
1/28/75 3 Mile 	2/26/75 3 Mile 

* Used as model for PAMILICO (160') new construction vessel.

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel SHADBUSH (74')

Sheet 3 of 4

3/4/75 - 3/8/75 3 Mile HP 16.0 16.0 72.0 21.0 109.0	5/6/75-5/11/75 3 Mile HP 16.0 16.0 96.0 22.0 134.0
3/17/75-3/20/75 3 Mile HP 12.0 12.0 48.0 9.0 74.0	5/20/75-5/23/75 3 Mile HP 16.0 16.0 48.0 14.0 78.0
3/31/75-4/2/75 3 Mile HP 16.0 16.0 24.0 21.0 61.0	6/16/75-6/25/75 3 Mile HP 16.0 16.0 192.0 20.0 228.0
4/8/75-4/12/75 3 Mile HP 16.0 16.0 72.0 1.0 89.0	7/3/75 3 Mile HP 10.0 10.0
4/17/75 3 Mile HP 16.0 16.0	7/9/75 3 Mile HP 8.0 8.0
4/21/75 3 Mile HP 22.0 22.0	7/15/75 3 Mile HP 16.0 16.0

* Used as model for PAMLICO (160') new construction vessel.

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel SHADBUSH (74')*

Sheet 4 of 4

7/16/75	3 Mile	
	HP 15.0	
	HP	
7/22/75-7/25/75	3 Mile	
	HP — 16.0 —	
	16.0	
	48.0	
	48.0	
	12.0	
	12.0	
	HP — 12.0 —	
	76.0	
8/11/75	3 Mile	
	HP 10.0	
	HP	
8/12/75	3 Mile	
	HP 14.0	
	HP	

* Used as model for PAMLICO (160') new construction vessel.

DETAILED VESSEL MISSION PROFILE DATA

Vessel CLAMP (75) 54

SEPTEMBER 1975

DATE Month <u>9</u> Year <u>25</u>	DOCKINGS		Hours in Home Port	Hours in Non- Home Port	Total Hours Under- Way	Hours Under- Way Within 2-Mile Limit	Number of 2-Mile Crossings
	Home	Non-Home					
9/1	x			1.0		23.0	0
9/2-9/10				216.0			
9/11	x			8.0		16.0	0
9/12-9/18						168.0	168.0
9/19	x			6.0		18.0	0
9/20-9/30						264.0	

Sheet 2 of 3

SORTIE CHARACTERISTICS (estimated)		TIME INTERVALS BEYOND RESTRICTED WAITING (Hours)	
TYPE	HOLDING TIME INTERVALS (Hours)	MAX	CITERS
I	202.0		
..			

Bravo Status

*** Used as a model for PAMLICO (160') new construction vessel.

DETAILED VESSEL MISSION PROFILE DATA

Vessel CLAMP (75')**

OCTOBER 1975

DATE Month Year	DOCKINGS		Hours in Home Port	Hours in Non- Home Port	TOTAL HOURS UNDER- WAY	Hours under- way within 3-mile limit	Number of 3-mile crossings	SOCIAL CHARACTERISTICS (Estimated)		
	Home	Non-Home						Arrival	Departure	TIME INTERVALS INTERVALS (Hours)
10/1-10/2*					48.0					
10/3	x	x		20.0		4.0	4.0	0	1	4.0
10/4-10/6*					72.0					
10/7	x			15.0		9.0	9.0	0	1	119.0
10/8-10/11						96.0	96.0	0		
10/12	x			10.0		14.0	14.0	0		
10/13-10/14*					48.0					
10/15	x			8.0		16.0	16.0	0	1	53.0
10/16						24.0	24.0	0		
10/17	x			11.0		13.0	13.0	0		
10/18-10/19*					48.0					
10/20*	#					24.0				
10/21-10/31*					264.0					

Sheet 3 of 3

TIME INTERVALS INTERVALS (Hours)	HOLDING TIME INTERVALS (Hours)		NUMBER OF 3-MILE CROSSINGS	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
	TYPE	MAX		OTHERS	TYPE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

* Bravo Status

Charlie Status

** Used as a model for PAMLICO (160') new construction vessel.

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel CLAMP (75')*

Sheet 1 of 1

8/27/75-9/1/75	3 Mile	
HP — 14.0 —	14.0	
	(96.0)	
	96.0	
	23.0	
HP — 23.0 —	133.0	
9/11/75-9/19/75	3 Mile	
HP — 16.0 —	16.0	
	(168.0)	
	168.0	
	18.0	
HP — 18.0 —	202.0	
10/3/75	3 Mile	
HP — 4.0 —	4.0	
HP —		
10/7/75 - 10/12/75	3 Mile	
HP — 9.0 —	9.0	
	(96.0)	
	96.0	
	14.0	
HP — 14.0 —	119.0	
10/15/75-10/17/75	3 Mile	
HP — 16.0 —	16.0	
	(24.0)	
	24.0	
	13.0	
HP — 13.0 —	53.0	

* Used as model for PAMLICO (160') new construction vessel.

WHITE SAGE (133')

Vessel Characteristics	Data
Class	WLM - 544 White Summac (133') Class
Type	Buoy Tender (Coastal)
Crew Size	21
Home Port	Woods Hole, Mass.
Mission Profile Data Source and Time Interval	From Ship's Log 8 Months 8/1/74-7/31/75

SUMMARY OF MISSION PROFILE CHARACTERISTICS

Vessel WHITE SAGE (133')

(One Year Average - based on 8 months of
data from August 1974-July 1975)

% of time in home port (7519.4 hours) -----	85.8
% of time in non-home port (280.7 hours)-----	3.2
% of time in yard* (216.0 hours)-----	2.5
% of time underway(743.9 hours) -----	8.5
% of time within 0-3 mile limit (692.2 hours) -----	7.9
% of time outside restricted waters (51.7 hours)-----	0.6
% of underway time within 0-3 mile limit -----	93.0
% of underway time outside restricted waters-----	6.9
Number of 3-mile crossings-----	34
Number of home port dockings-----	163
Number of non-home port dockings-----	23
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non-home port -----	972.9
% of time spent within 0-3 mile limit and/or in non-home port -----	11.1
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port) -----	65.5
Maximum continuous number of hours outside restricted waters -----	5.0

* Refurbishment

HOLDING TIMES

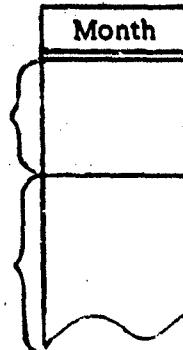
Vessel WHITE SAGE (133')

1974			1975								
Aug	Oct	Dec	Feb	Apr	May	June	July	Aug	Oct	Dec	
6.0	2.5	2.0	65.5	8.0	1.5	9.0	47.0				
65.5	8.0	7.0	5.0	9.0	6.0	8.0	11.0				
5.0	10.0	5.5	7.0	32.0	8.0	5.0	4.0				
6.0	6.0		6.0	10.0	8.0	4.0	10.0				
5.0	2.75		30.0	6.0	4.0	7.0	8.0				
5.5	2.5		2.5		6.0	7.0	7.0				
9.0	2.75				11.0	8.0	9.0				
10.0					7.0	6.0	10.0				
4.0					6.0	4.0	4.0				
22.0						5.0	6.0				
12.5						8.0					
5.5						9.0					

Month

Maximum holding
times for sorties

All other sortie
holding times



WHITE SAGE (133')

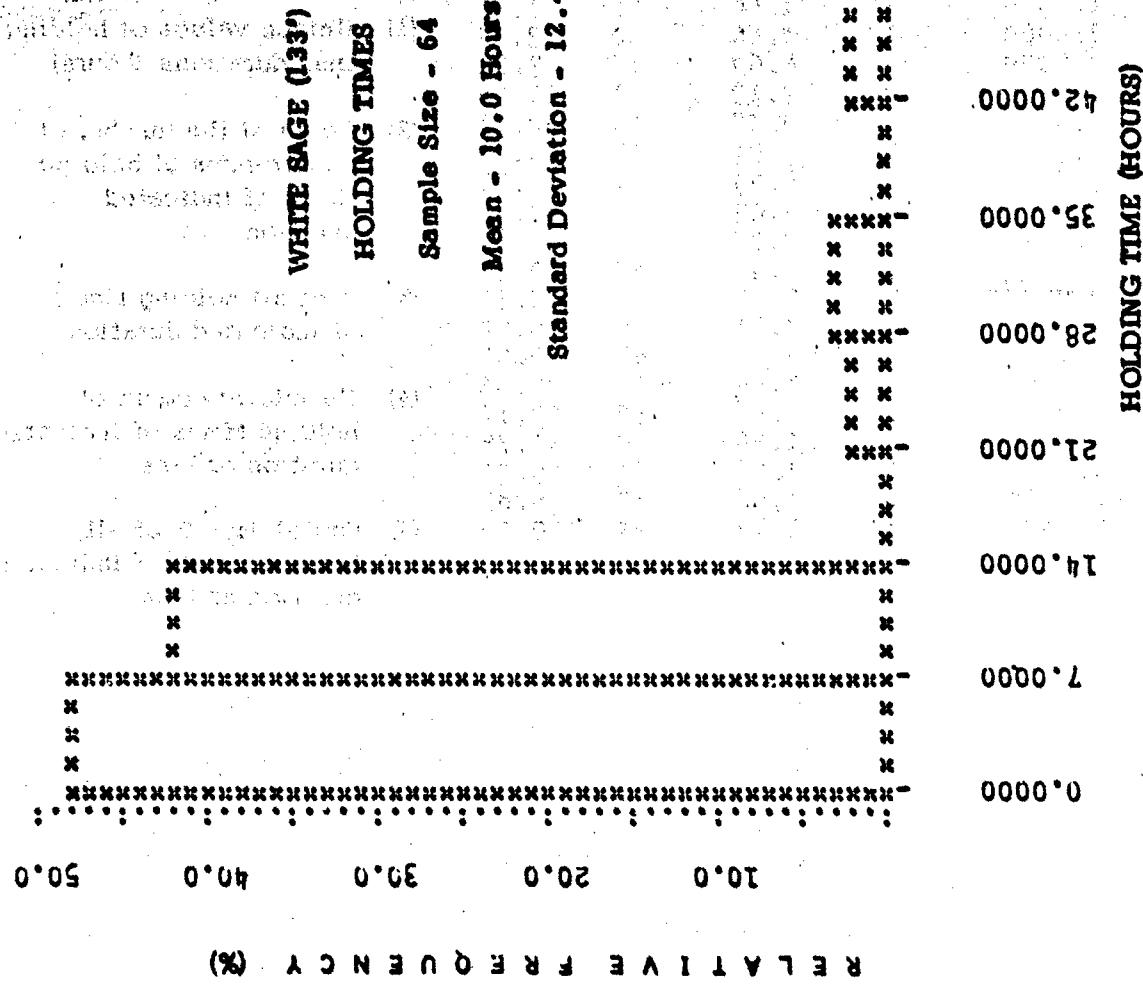
HOLDING TIMES

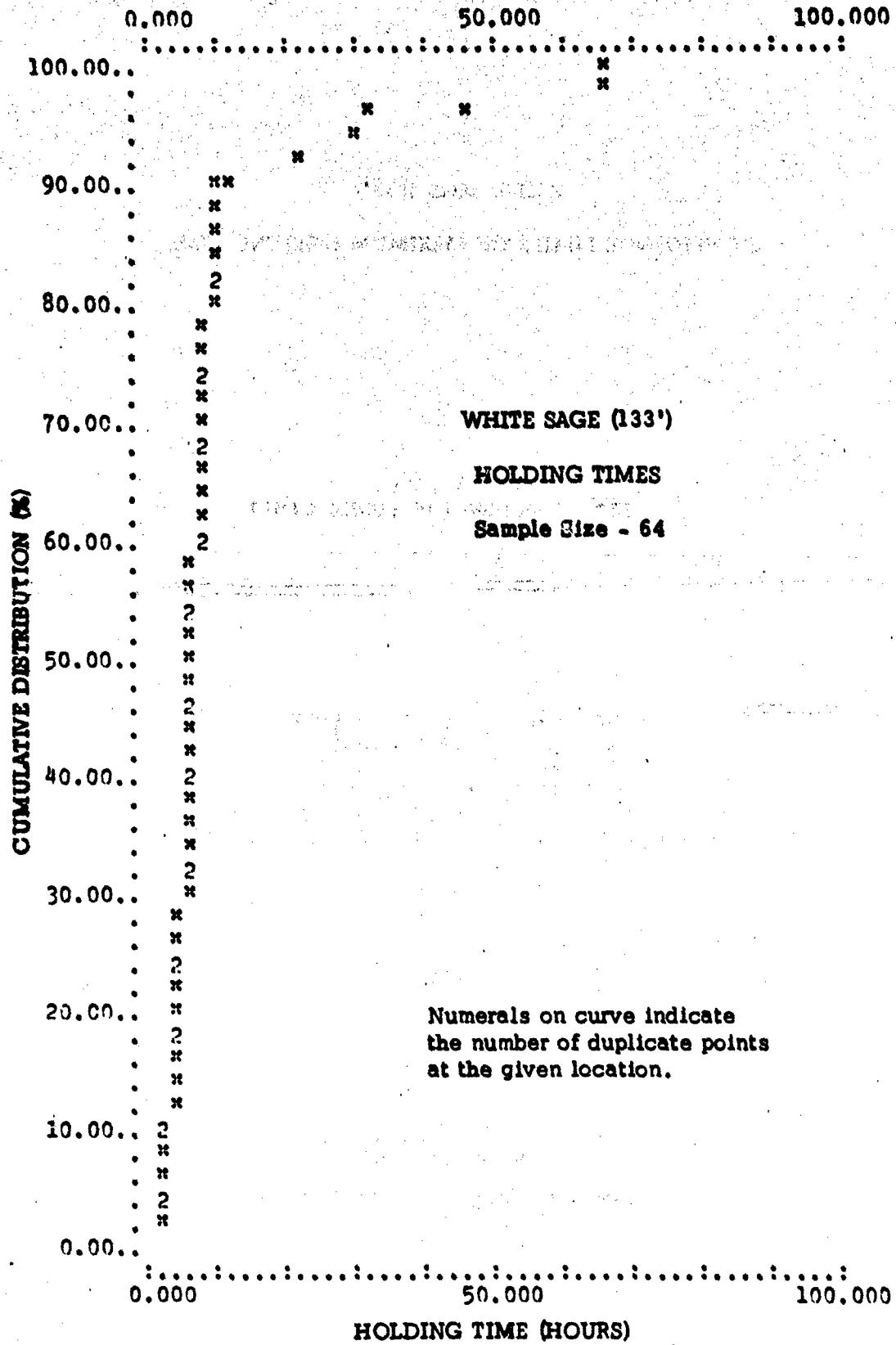
FREQUENCY TABLE

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
-----	-----	-----	-----	-----
1.5000	1	1.56	1	1.56
2.0000	1	1.56	2	3.13
2.5000	3	4.69	5	7.81
2.7500	2	3.13	7	10.94
4.0000	6	9.38	13	20.31
5.0000	5	7.81	18	28.13
5.5000	3	4.69	21	32.81
6.0000	10	15.63	31	48.44
7.0000	6	9.38	37	57.81
8.0000	8	12.50	45	70.31
9.0000	5	7.81	50	78.13
10.0000	5	7.81	55	85.94
11.0000	2	3.13	57	89.06
12.5000	1	1.56	58	90.63
22.0000	1	1.56	59	92.19
30.0000	1	1.56	60	93.75
32.0000	1	1.56	61	95.31
47.0000	1	1.56	62	96.88
65.5000	2	3.13	64	100.00

NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less





WHITE SAGE (133")

CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

**LOWER LIMIT? 65.5001
100 % BELOW THE LOWER LIMIT**

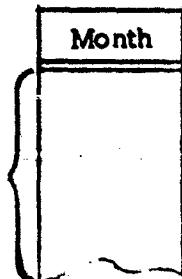
CONF LEVEL		LOWER	UPPER
3	50	97.90	100.00
3	75	96.90	100.00
3	90	95.50	100.00
3	95	94.50	100.00
3	99	92.10	100.00

**Sample Size - 64
Maximum Holding Time - 65.5 Hours**

TIMES BEYOND RESTRICTED WATERS

Vessel WHITE SAGE (133')

Sortie times beyond restricted waters



WHITE SAGE (133)

TIMES BEYOND RESTRICTED WATERS

FREQUENCY TABLE

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
2.0000	1	9.09	1	9.09
3.0000	9	81.82	10	90.91
5.0000	1	9.09	11	100.00

NOTES:

- (1) Unique values of time durations (hours) beyond restricted waters
- (2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
- (3) % of all time intervals beyond restricted waters of indicated duration
- (4) Cumulative count of number of time intervals beyond restricted waters of indicated duration or less
- (5) Cumulative % of time intervals beyond restricted waters of indicated duration or less

**WHITE SAGE (133)
TIMES BEYOND RESTRICTED WATERS**

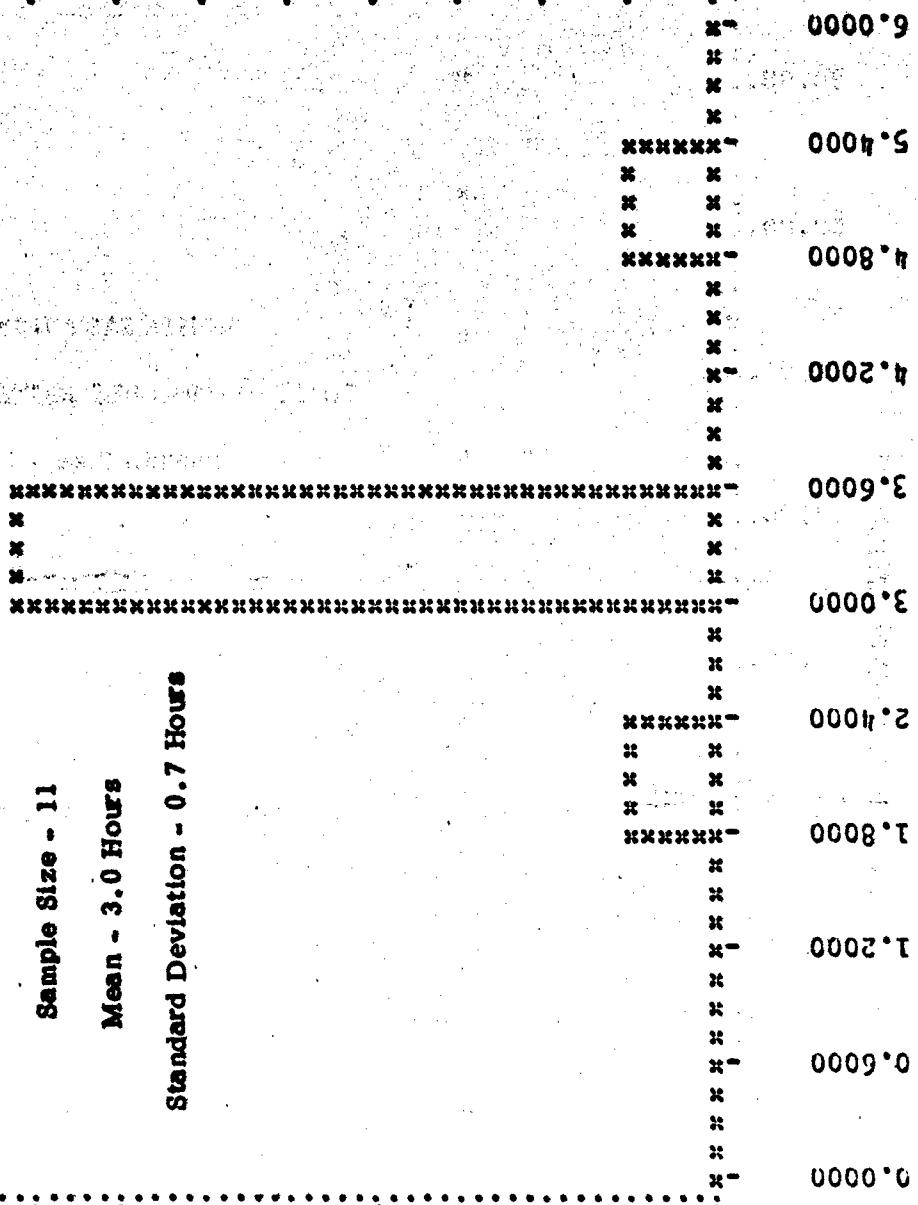
Sample Size - 11

Mean - 3.0 Hours

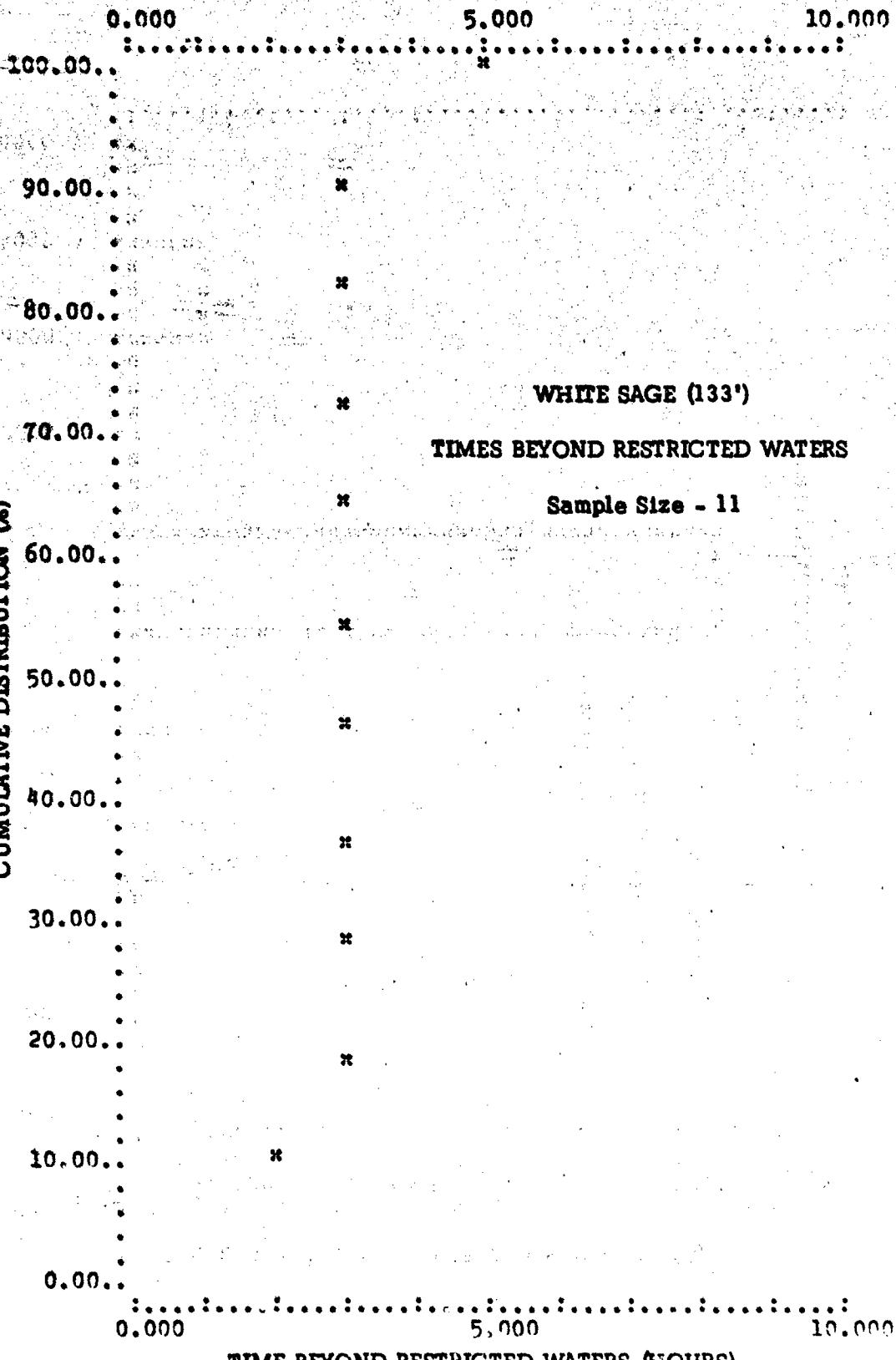
Standard Deviation - 0.7 Hours

20.0 40.0 60.0 80.0 100.0

RELATIVE FREQUENCY (%)



CUMULATIVE DISTRIBUTION (%)



WHITE SAGE (133')

TIMES BEYOND RESTRICTED WATERS

Sample Size - 11

AUGUST 1974

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (133')

Sheet 1 of 10

DATE Month <u>8</u> Year <u>74</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS	UNDER- WAY	WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SORTE CHARACTERISTICS (Estimated)		
	Home	Non-Home							HOLDING TIME INTERVALS (hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (hours)	MAX
8/1	x	x			18.0		6.0	0			1
8/2-8/4*					72.0						6.0
8/5	x	x			14.0	10.0	10.0	0			
8/6	x				10.5	13.5	13.5	0			
8/7	x	x			14.0	10.0	7.0(1)	2			
8/8	x	x			16.0	8.0	5.0(1)	2			
8/9	x				14.0		10.0	0			
8/10-8/13*					96.0						
8/14	x	x			19.0		5.0	0			
8/15-8/19*					120.0						
8/20	x	x			18.0		6.0	0			
8/21*					24.0						
8/22	x	x			19.0		5.0	0			
8/23	x	x			10.0		14.0	11.0(1)	2		
8/24-8/27*					96.0						
8/28	x	x			15.0		9.0	0			
8/29	x	x			14.0		10.0	0			

* Bravo Status (1) Underway time in 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

AUGUST 1974

Vessel - WHITE SAGE (133')

Sheet 2 of 10

SOUTIEN CHARACTERISTICS (Estimated)	TIME INTERVALS		HOLDING TIME INTERVALS (Hours)	MAX	OTHERS	TIME BEYOND RESTRICTED WATERS (Hour)
	H	S				
TYP	1	4.0				

Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel - WHITE Sage (133)

OCTOBER 1974

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home						HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	TYPE
								MAX	OTHERS	
10/1	x	x			16.0		6.0	5.0*	2	II b-1
10/4-10/7					144.0					2.5
10/8	x	x			16.0		8.0	8.0	0	1
10/9	x	x			14.0		10.0	10.0	0	1
10/10-10/16*					168.0					10.0
10/17	x	x			18.0		6.0	6.0	0	1
10/18-10/21*					96.0					6.0
10/22	x				15.5		8.5	5.5(1)	2	IV
10/23-10/31*x(2)	x(2)	x(2)			216.0(2)					

Sheet 3 of 10

* Bravo Status

(1) Underway time in 3-mile limit split in half.

(2) Refurbishment - (Replace boiler) - Use Yard Sewage System.

DETAILED VESSEL MISSION PROFILE DATA

DECEMBER 1974

Vessel - WHITE SAGE (1337)

DATE	DOCKINGS	HOME	LAST HOME	HOURS IN HOME PORT	TOTAL HOURS	UNDER WAIT WITHIN 3-MILE LIMIT	NUMBER OF 4-MILE CROSSINGS	SOME CHARACTERISTICS (estimated)			TIME INTERVALS BETWEEN RETOUR RESTRICTED WATERS (Home)
								TYPE	HOLDING TIME INTERVALS (Home)	MAX OTHERS	
Dec 12-12/4*				96.0							
12/5	x	x		22.0	2.0	2.0	0	1	2.0		
12/6-12/9*				96.0							
12/10	x	x		17.0	7.0	7.0	0	1	7.0		
12/11	x	x		18.5	5.5	5.5	0	1	5.5		
12/12-12/13*				96.0							
12/16-12/31*				384.0							

* Bravo Status
* Charlie Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (133)

FEBRUARY 1975

DATE	DOCKINGS		ROUTE CHARACTERISTICS (Estimated)					
	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)		HOLDING TIME INTERVALS (Hours)		NUMBER OF 3-MILE CROSSINGS		TYPE	MAX OTHERS
	Home	Non-Home	In Home	Non-Home	Total Hours Under Way	Under Way Within 3-Mile Limit		
March 2 Year 75								
2/1-2/2*			48.0					
2/3	x	x		15.0	9.0	0		
2/4		x			15.0	12.0(1)	2	
2/5-2/6*	x	x		57.0				
2/7	x			16.0	8.0	5.0(1)	2	
2/8-2/12*			120.0					
2/13	x	x		19.0	5.0	5.0	0	1 5.0
2/14-2/19*				144.0				
2/20	x	x		17.0	7.0	7.0	0	1 7.0
2/21-2/27*				168.0				
2/28	x	x		18.0	6.0	6.0	0	1 6.0

* Brave Statistics

(1) Underway time in 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (1331)

APRIL 1975

DATE	DOCKINGS		TOTAL HOURS UNDER WAY	TOTAL HOURS WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home			
	Departure	Arrival			
4/1-4/20*			480.0		
4/21	x	x	16.0	8.0	0
4/22*			24.0		
4/23	x	x	15.0	9.0	0
4/24-4/27*			96.0		
4/28	x	x	9.0	15.0	12.0(1) 2
4/29		x	12.0	12.0	10.0(1) 2
4/30	x		19.0	5.0	5.0 0

Charlie Status

(1) Underway time in 3-mile limit split in half.

Sheet 6 of 10

SOUTHE CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
TYPE	HOLDING TIME INTERVALS (Hours)		
	MAX	OTHERS	
I	8.0		
I	9.0		
III d=1	32.0	10.0, 6.0	3.0, 2.0

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (133')

MAY 1975

Sheet 7 of 10

DATE Month <u>5</u> Year <u>75</u>	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOUTHE CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Arrival	MAX	OTHERS
5/1	x	x		22.5	1.5	1.5	0		1	1.5
5/2-5/5*				96.0						
5/6	x	x		18.0	6.0	6.0	0		1	6.0
5/7	x	x		16.0	8.0	8.0	0		1	8.0
5/8-5/12*				120.0						
5/13	x	x		16.0	8.0	8.0	0		1	8.0
5/14	x	x		20.0	4.0	4.0	0		1	4.0
5/15-5/18				96.0						
5/19	x	x		18.0	6.0	6.0	0		1	6.0
5/20	x	x		13.0	11.0	11.0	0		1	11.0
5/21	x	x		17.0	7.0	7.0	0		1	7.0
5/22-5/27*				144.0						
5/28	x	x		18.0	6.0	6.0	0		1	6.0
5/28-5/31*				72.0						

Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (133')

JUNE 1975

Sheet 8 of 10

DATE Month <u>6</u> Year <u>75</u>	DOCKINGS Name	HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOUTHE CHARACTERISTICS (Estimated)		
							HOLDING TIME INTERVALS (Hours)	TYPE	BEYOND RESTRICTED WATERS (Hours)
ARRIVAL Departure	ARRIVAL Departure	MAX	OTHERS	MAX	OTHERS	MAX	OTHERS	MAX	OTHERS
6/1*		24.0							
6/2	x x	15.0		9.0	9.0	0	1	9.0	
6/3	x x	16.0		8.0	8.0	0	1	8.0	
6/4	x x	19.0		5.0	5.0	0	1	5.0	
6/5-6/7*		72.0							
6/8	x x	20.0		4.0	4.0	0	1	4.0	
6/9*		24.0							
6/10	x x	17.0		7.0	7.0	0	1	7.0	
6/11	x x	17.0		7.0	7.0	0	1	7.0	
6/12-6/16*		120.0							
6/17	x x	16.0		8.0	8.0	0	1	8.0	
6/18	x x	18.0		6.0	6.0	0	1	6.0	
6/19-6/22*		96.0							
6/23	x x	20.0		4.0	4.0	0	1	4.0	
6/24	x x	19.0		5.0	5.0	0	1	5.0	
6/25	x x	16.0		8.0	8.0	0	1	8.0	
6/26	x x	15.0		9.0	9.0	0	1	9.0	

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* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel WHITE SAGE (133')

July 1975

DATE	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS*
	Home	Non-Home				
Month <u>7</u>						
Year <u>75</u>						
7/1-7/13*			312.0			
7/14	x	x		13.0	11.0	8.0(1)
7/15			x	24.0		2
7/16	x		x	7.0	17.0	12.0(1)
7/17-7/20*			96.0			
7/21	x	x		13.0	11.0	0
7/22	x	x		20.0	4.0	0
7/23	x	x		14.0	10.0	0
7/24	x	x		16.0	8.0	0
7/25-7/27*			72.0			
7/28	x	x		17.0	7.0	0
7/29	x	x		15.0	9.0	0
7/30	x	x		14.0	10.0	0
7/31				24.0		

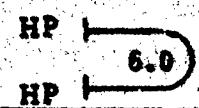
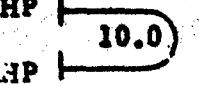
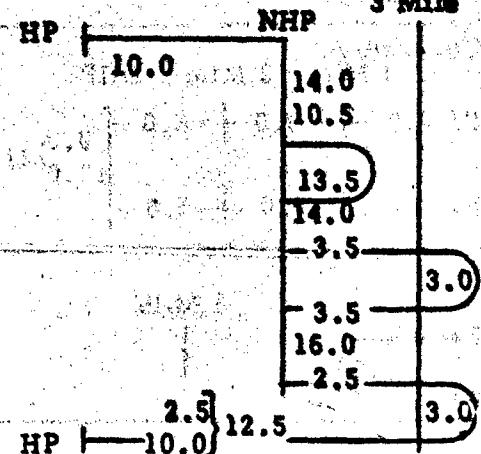
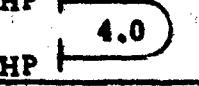
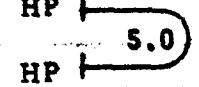
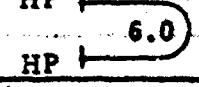
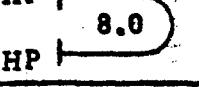
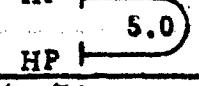
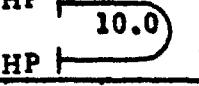
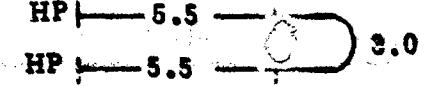
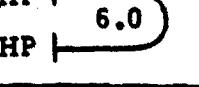
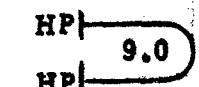
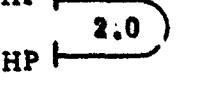
* Bravo Status
* Charlie Status

Sheet 10 of 10

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel WHITE SAGE (133')

Sheet 1 of 4

8/1/74  3 Mile	8/29/74  3 Mile
8/5/74-8/9/74  NHP 3 Mile	8/30/74  3 Mile
8/14/74  3 Mile	10/1/74  3 Mile
8/20/74  3 Mile	10/8/74  3 Mile
8/22/74  3 Mile	10/9/74  3 Mile
8/23/74  3 Mile	10/17/74  3 Mile
8/28/74  3 Mile	10/22/74 - 10/31/74 3 Mile 3 Mile Yard HP — 2.75 + 3.0 + 2.75 + 216.0
	12/5/74  3 Mile

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel WHITE SAGE (133')

Sheet 3 of 4

12/10/74	3 Mile	HP 7.0	4/23/75	3 Mile	HP 9.0
12/11/74	3 Mile	HP 5.5	4/28/75-4/30/75	3 Mile	NHP
2/3/75-2/7/75	3 Mile	HP 9.0	HP 6.0 + 3.0 + 6.0 = 9.0	3 Mile	12.0 21.0
		15.0 6.0 6.0 57.0 2.5	HP 5.0 + 5.0 = 2.0 + 5.0		
2/13/75	3 Mile	HP 2.5	5/1/75	3 Mile	HP 1.5
2/20/75	3 Mile	HP 5.0	5/6/75	3 Mile	HP 6.0
2/28/75	3 Mile	HP 7.0	5/7/75	3 Mile	HP 8.0
4/21/75	3 Mile	HP 6.0	5/13/75	3 Mile	HP 8.0
		HP 8.0	5/14/75	3 Mile	HP 4.0
		HP 8.0	5/19/75	3 Mile	HP 6.0

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel WHITE SAGE (133)

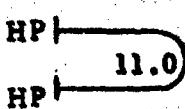
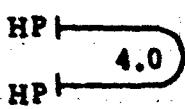
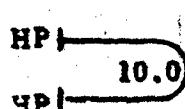
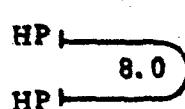
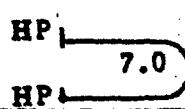
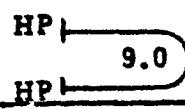
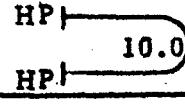
Sheet 3 of 4

5/20/75	3 Mile	6/11/75	3 Mile
	HP 11.0		HP 7.0
5/21/75	3 Mile	6/17/75	3 Mile
	HP 7.0		HP 8.0
5/28/75	3 Mile	6/18/75	3 Mile
	HP 6.0		HP 6.0
6/2/75	3 Mile	6/23	3 Mile
	HP 9.0		HP 4.0
6/3/75	3 Mile	6/24/75	3 Mile
	HP 8.0		HP 5.0
6/4/75	3 Mile	6/25/75	3 Mile
	HP 5.0		HP 8.0
6/8/75	3 Mile	6/26/75	3 Mile
	HP 4.0		HP 9.0
6/10/75	3 Mile	7/14/75 - 7/16/75	3 Mile 3 Mile NHP
	HP 7.0		HP 4.0 + 3.0 + 4.0 + 13.0 HP 6.0 + 5.0 + 6.0 + 24.0 > 37.0

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel WHITE SAGE (133')

Sheet 4 of 4

7/21/75	3 Mile	
7/22/75	3 Mile	
7/23/75	3 Mile	
7/24/75	3 Mile	
7/28/75	3 Mile	
7/29/75	3 Mile	
7/30/75	3 Mile	

POINT HERRON (82')

Vessel Characteristic	Data
Class	WPB - 82318 Point (82') C Class
Type	Patrol Boat (Small)
Crew Size	8
Home Port	Bay Shore, New York (Fire Island)
Mission Profile Data Source and Time Interval	From Summary Log <u>15 Months</u> <u>5/1/73-7/31/74</u>

SUMMARY OF MISSION PROFILE CHARACTERISTICS

Vessel POINT HERRON (82')

**(One Year Average - based on 15 months
of data from May 1973-July 1974)**

% of time in home port (7830.4 hours) -----	89.4
% of time in non-home port (91.6 hours) -----	1.0
% of time in yard* (480.0 hours) ⁽¹⁾ -----	5.5
% of time underway(358.0 hours) -----	4.1
% of time within 0-3 mile limit (70.5 hours) -----	0.8
% of time outside restricted waters (287.5 hours)-----	3.3
% of underway time within 0-3 mile limit -----	19.7
% of underway time outside restricted waters-----	80.0
Number of 3-mile crossings-----	92
Number of home port dockings-----	88
Number of non-home port dockings-----	4
Holding time (hours), i.e., time spent within 0-3 mile limit and/or in non-home port -----	162.0
% of time spent within 0-3 mile limit and/or in non-home port -----	1.8
Maximum holding time (hours), i.e., largest time interval within 0-3 mile limit and/or in non-home port) -----	99.0
Maximum continuous number of hours outside restricted waters -----	22.5

* Refurbishment

(1) Weighted average of 384 and 216 hours over 15-month period.
Weighted difference of 120 hours added to time in home port.

HOLDING TIMES
vessel POINT HERRON (82')

Maximum holding times for sorties

All other sortie holding times

Month

POINT HERRON (82")

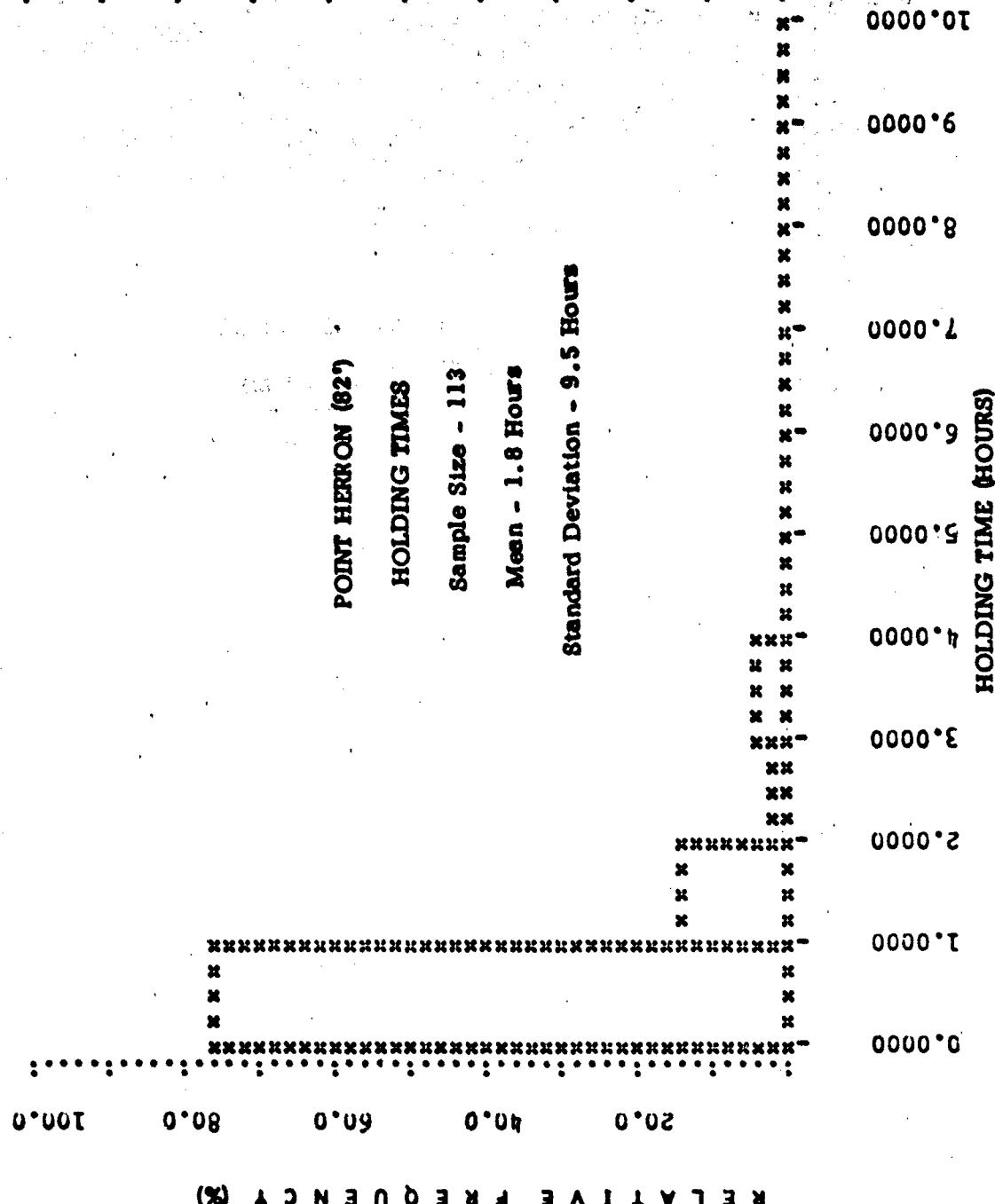
HOLDING TIMES

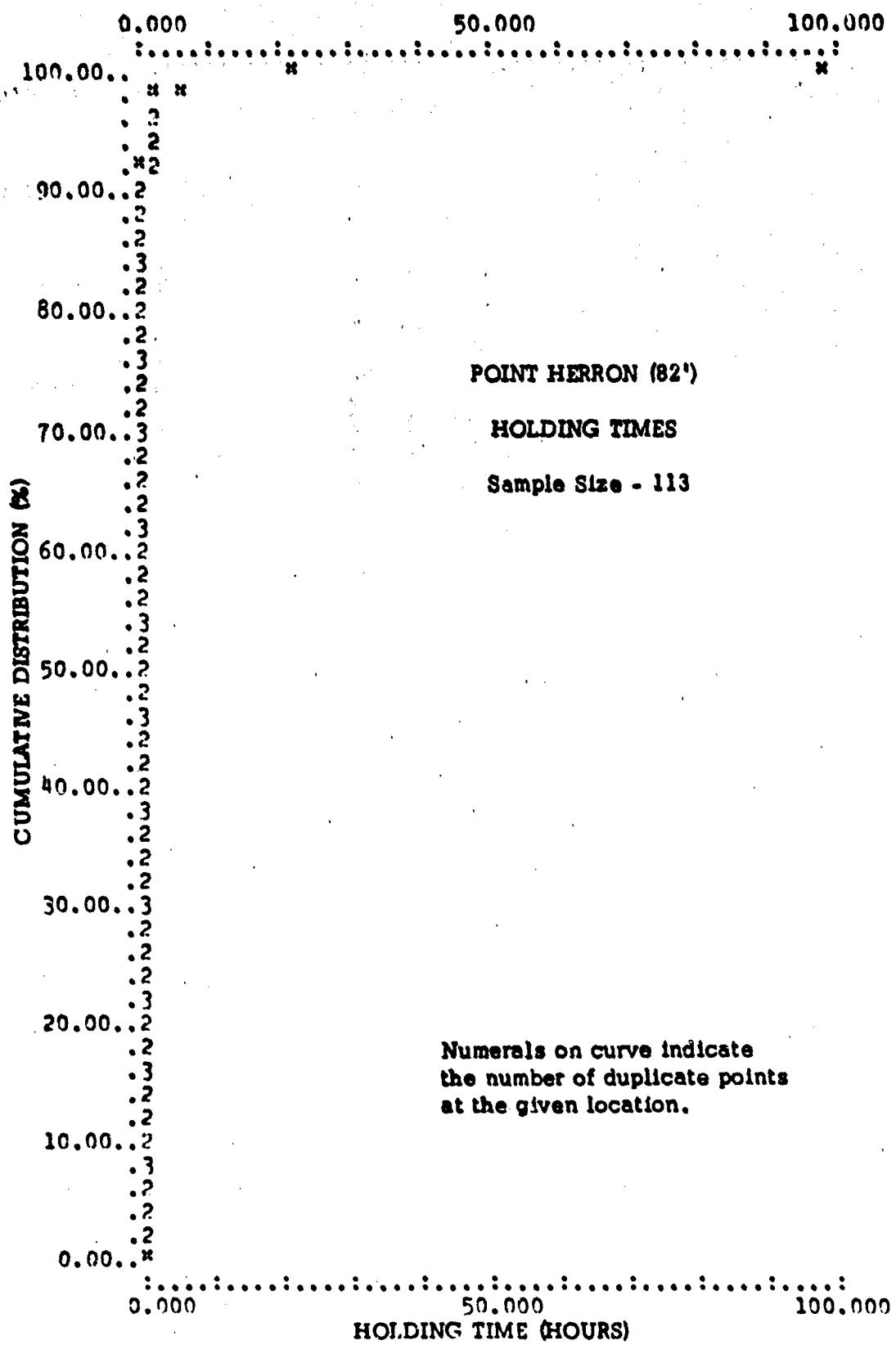
FREQUENCY TABLE

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
-----	----	----	----	----
0.5000	85	75.22	85	75.22
0.7500	2	1.77	87	76.99
1.0000	16	14.16	103	91.15
2.0000	1	0.88	104	92.04
2.4000	2	1.77	106	93.81
3.0000	4	3.54	110	97.35
6.0000	1	0.88	111	98.23
21.5000	1	0.88	112	99.12
99.0000	1	0.88	113	100.00

NOTES:

- (1) Unique values of holding time durations (hours)
- (2) Count of the number of occurrences of holding times of indicated duration
- (3) % of all holding times of indicated duration
- (4) Cumulative count of number of holding times of indicated duration or less
- (5) Cumulative % of all holding times of indicated duration or less





POINT HERRON (82°)

CONFIDENCE LIMITS ON MAXIMUM HOLDING TIME

**LOWER LIMIT? 99.0001
100 % BELOW THE LOWER LIMIT**

CONF LEVEL		LOWER	UPPER
%	50	98.80	100.00
%	75	98.20	100.00
%	90	97.40	100.00
%	95	96.80	100.00
%	99	95.50	100.00

**Sample Size - 113
Maximum Holding Time - 99 Hours**

TIMES BEYOND RESTRICTED WATERS
Vessel POINT HERRON (82')

Month

Sortie times beyond
restricted waters

POINT HERRON (82')

TIMES BEYOND RESTRICTED WATERS

F R E Q U E N C Y T A B L E

(1) CELL LOWER LIMIT	(2) FREQ	(3) REL FREQ	(4) CUM FREQ	(5) CUM REL FREQ
1.0000	6	10.34	6	10.34
2.0000	6	10.34	12	20.69
2.5000	2	3.45	14	24.14
3.0000	6	10.34	20	34.48
3.2000	1	1.72	21	36.21
4.0000	4	6.90	25	43.10
5.0000	6	10.34	31	53.45
6.0000	4	6.90	35	60.34
7.0000	5	8.62	40	68.97
8.0000	2	3.45	42	72.41
9.0000	2	3.45	44	75.86
10.0000	4	6.90	48	82.76
11.0000	1	1.72	49	84.48
12.0000	2	3.45	51	87.93
13.0000	2	3.45	53	91.38
13.5000	1	1.72	54	93.10
14.0000	1	1.72	55	94.83
15.0000	2	3.45	57	98.28
22.5000	1	1.72	58	100.00

NOTES:

- (1) Unique values of time durations (hours) beyond restricted waters
- (2) Count of the number of occurrences of time intervals beyond restricted waters of indicated duration
- (3) % of all time intervals beyond restricted waters of indicated duration
- (4) Cumulative count of number of time intervals beyond restricted waters of indicated duration or less
- (5) Cumulative % of time intervals beyond restricted waters of indicated duration or less

POINT HERRON (B2')
TIMES BEYOND RESTRICTED WATERS

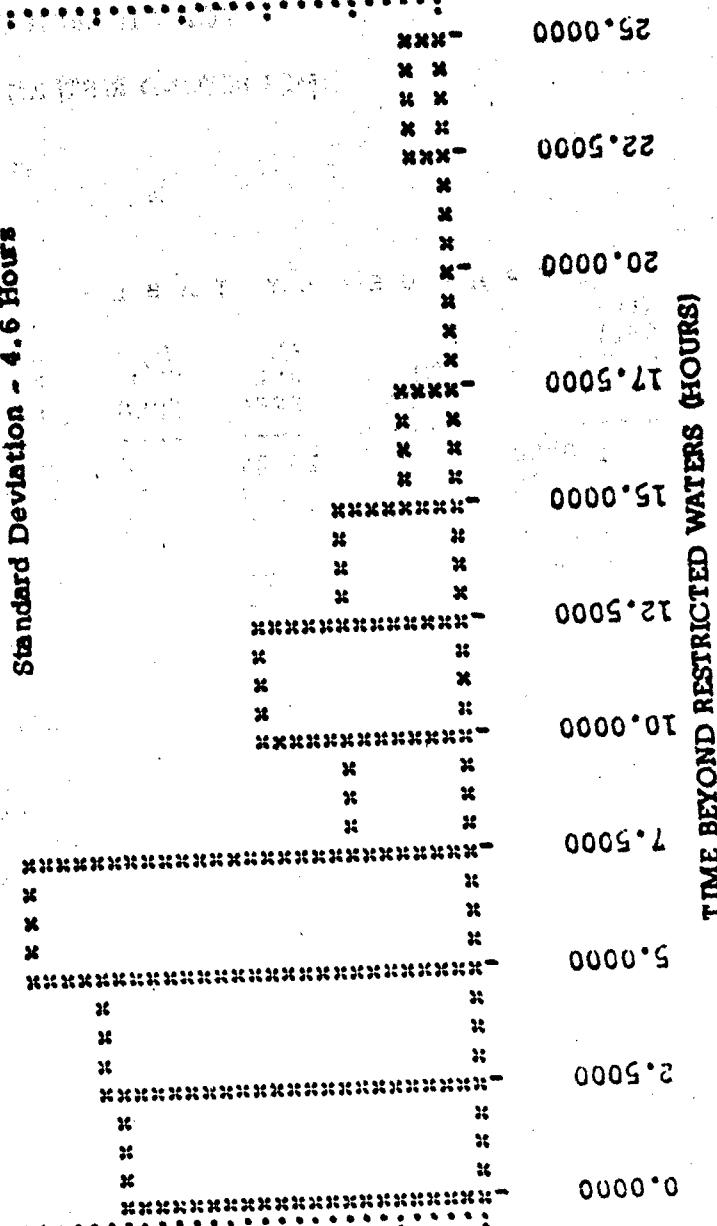
Sample Size - 58

Mean - 6.3 Hours

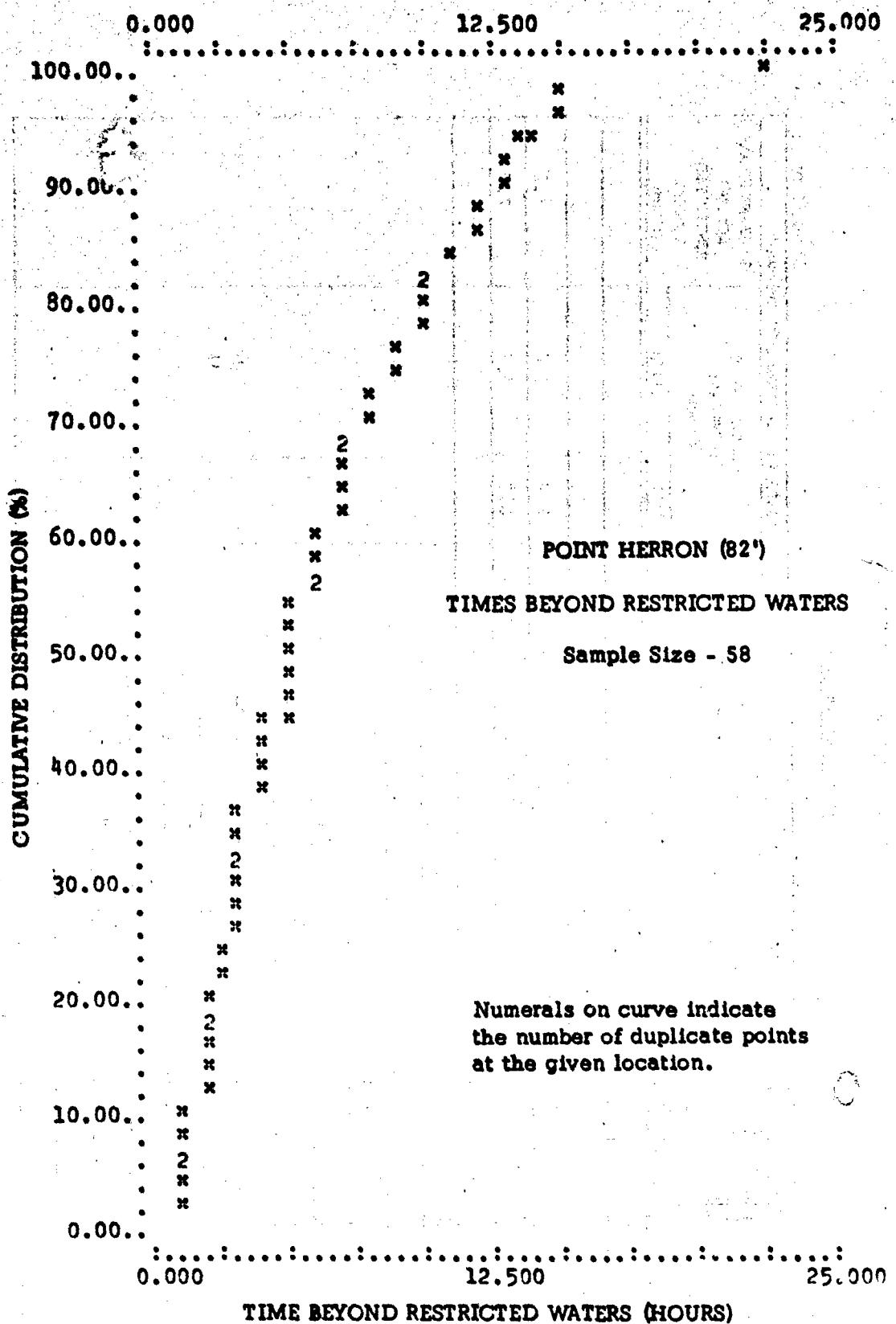
Standard Deviation - 4.6 Hours

10.0 20.0 30.0 40.0 50.0

RELATIVE FREQUENCY (%)



TIME BEYOND RESTRICTED WATERS (HOURS)



DETAILED VESSEL MISSION PROFILE DATA

Vessel damage (82%)

MAY 1973

DATE Month Year	DOCKINGS		DEPARTURE Arrival	ARRIVAL IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home						
5/1-5/15#					360.0			
5/16-5/25#					240.0			
5/26	X	X			16.0	8.0	4.8 ⁽¹⁾	2
5/27	X	X			16.0	8.0	1.0 ⁽¹⁾	2
5/28-5/31*					96.0			

sheet 1 of 15

SOME CHARACTERISTICS (Estimated)		TIME INTERVALS		
TYPE	HOLDING TIME INTERVALS (Hours)	BEYOND RESTRICTED WATERS (Hours)		3.2.
		MAX	OTHERS	
H b=1	2.4	2.4		
H b=1	0.5	0.5		7.0

(1) Underway time within 3-mile limit split in half.

* Bravo Status
Charlie Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (82')

JUNE 1973

DATE Month Year	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOUTHE CHARACTERISTICS (Estimated)		
	Home	Non-Home						TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Departure	Arrival	Departure	Arrival	Departure	Arrival	MAX	OTHERS	MAX	
6/1*					24.0					
6/2	x	x	13.0		11.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
6/3	x	x	12.0		12.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
6/4*			24.0							
6/5	x	x	17.0		7.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
6/6	x		21.0		3.0	0.5	1	II b=1	0.5	0.5
6/7	x		11.0		13.0	0.5	1			
6/8*			24.0							
6/9-6/29#			504.0							
6/30*			24.0							

* Bravo Status
Charlie Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (E21)

July 1973

Sheet 3 of 15

* Bravo Status

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

VESSEL POINT HERRON(82')

AUGUST 1973

DATE	DOCKINGS		Departure Arrival	Hours In Home Port	Hours In Non- Home Port	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home						
	Departure	Arrival						
Month 8 Year 73*								
8/1-8/3*				72.0				
8/4	x	x		9.0		15.0	3.0	6
8/5	x	x		8.0		16.0	6.0	12
8/6-8/14*				216.0				
8/15	x	x		20.0		4.0	1.0 ⁽¹⁾	2
8/16-8/17*				48.0				
8/18	x	x		9.0		15.0	1.0 ⁽¹⁾	2
8/19	x	x		8.0		16.0	1.0 ⁽¹⁾	2
8/20-8/29*				240.0				
8/30	x	x		16.0		8.0	1.0 ⁽¹⁾	2
8/31*				24.0				

Bravo Status

(1) Underway time within 3-mile limit split in half.

Sheet 1 of 15

SORTIE CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
TYPE	HOLDING TIME INTERVALS (Hours)		(Hour)
	MAX	OTHERS	
II b=3			
C=2	1.0	1.0-0.5-0.5	4.0-4.0-4.0
b=6			3.0-3.0-1.0
C=5	1.0	1.0-0.5-0.5	1.0-1.0-1.0
II b=1	0.5	0.5	3.0
II b=1	0.5	0.5	14.0
II b=1	0.5	0.5	15.0
II b=1	0.5	0.5	7.0

DETAILED VESSEL MISSION PROFILE DATA

VASSAL POINT HERRON (82")

SEPTEMBER 1973

DATE	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home					
Month <u>9</u> Year <u>73</u>	Arrival	Departure					
9/1-9/2*			48.0				
9/3	x	x	13.0		11.0	1.0 (1)	2
9/4-9/5*			48.0				
9/5	x	x	21.0		3.0	1.0 (1)	2
9/7-9/19**			312.0				
9/20*	x	x	17.0		7.0	1.0 (1)	2
9/21*			24.0				
9/22	x	x	15.0		9.0	1.0 (1)	2
9/23	x	x	18.0		6.0	6.0	0
9/24-9/27*	x				96.0 (2)		
9/28	x		11.0		13.0	6.0	2
9/29-9/30*			48.0				

Bravo Status

(1) Underway time within 3-mile limit split in half.

(2) Philadelphia

Sheet 5 of 15

SORTIE CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)		
TYPE	HOLDING TIME INTERVALS (Hour)	MAX	OTHERS	
II b=1	0.5	0.5		10.0
II b=1	0.5	0.5		2.0
II b=1	0.5	0.5		5.0
II b=1	0.5	0.5		8.0
I	6.0			
II a=1 b=1	99.0	3.0		7.0

DETAILED WEBSITE MISSION PROFILE DATA

Vessel POINT HERRON (82')

OCTOBER 1973

DATE	DOCKINGS		ARRIVAL Home	ARRIVAL Non-Home	HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home						
March 10 Year 73								
10/1-10/4*					96.0			
10/5	x	x			21.0		3.0	1.0 (1) 2
10/6-10/23*					432.0			
10/24	x	x			20.0		4.0	1.0 (1) 2
10/25-10/31*					168.0			

Charlie Status

Underway time within 3-mile limit split in half.

Sheet 6 of 15

SORTIE CHARACTERISTICS (Estimated)		TIME INTERVALS		
TYPE		HOLDING TIME INTERVALS (Hours)		BEYOND RESTRICTED WATERS (Hours) (Hours)
		MAX	OTHERS	
II b=1		0.5	0.5	2.0
II b=1		0.5	0.5	3.0

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (821)

NOVEMBER 1973

DATE	DOCKINGS		HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 2-MILE LIMIT	NUMBER OF 2-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home					TYPE	HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)
	Arrival	Departure	Arrival	Departure	Arrival	Departure	MAX	OTHERS	
11/1-11/4*				96.0					
11/5	x	x		15.0		9.0	2.0 (1)	2	II b=1 1.0 1.0 7.0
11/6-11/11*				144.0					
11/12	x	x		26.0		4.0	2.0 (1)	2	II b=1 1.0 1.0 2.0
11/13-11/28*	x ⁽²⁾	x ⁽²⁾			384.0 ⁽²⁾				
11/29	x	x ⁽²⁾		21.0		3.0	2.0 (1)	2	II b=1 1.0 1.0 1.0
11/30*				24.0					

Bravo Status

Charlie Status

(1) Underway time within 3-mile limit split in half.

(2) Yard for Refurbishment-Use Municipal Sewage Facility

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (82')

Sheet 8 of 15

DECEMBER 1973

DATE	DOCINDEX		HOURS IN NON- HOME PORT	HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SOME CHARACTERISTICS (estimated)		
	Home	Non-Home						HOLDING TIME INTERVALS (Hours)	TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	TIME MAX
March 12 Year 23	Departure	Arrival								
12/1*			24.0							
12/2	x	x	20.0		4.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
12/3-12/12*			240.0							
12/13	x	x	22.0		2.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
12/14-12/15*			48.0							
12/16	x	x	21.0		3.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
12/17	x	x	18.0		6.0	1.0 ⁽¹⁾	2	II b=1	0.5	0.5
12/18-12/31*			336.0							

* Bravo Status

(1) Underway time within 3-mile limit split in half

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT JERRON (82)

JANUARY 1974

DATE	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	TIME INTERVALS (Hours)	SOLO CHARACTERISTICS (Estimated)	
	Home	Non-Home							MAX	OTHERS
Month <u>1</u> Year <u>74</u>										
/1-1/7			168.0							
/8	x	x	22.0		2.0	2.0	0	1	2.0	
/9-1/31*			552.0							

Sheet 9 of 15

DATE	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	TIME INTERVALS (Hours)	SOLO CHARACTERISTICS (Estimated)	
	Home	Non-Home							MAX	OTHERS
Month <u>1</u> Year <u>74</u>										
/1-1/7			168.0							
/8	x	x	22.0		2.0	2.0	0	1	2.0	
/9-1/31*			552.0							

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (82")

FEBRUARY 1974

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Bravo States

(1) Underway time within 3-mile limit split in half.

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERON (821)

MARCH 1974

DATE	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home					
Month <u>3</u> Year <u>74</u>							
3/1-3/16*					364.0		
3/17	x	x			23.0		1.0
3/18-3/31*					336.0		0

Sheet 11 of 15

* Bravo Status

DETAILED VESSEL MISSION PROFILE DATA

Vessel POINT HERRON (82')

APRIL 1974

DATE Month Year	LOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS	SCORING CHARACTERISTICS (Estimates)		
	Home	Non-Home						TYPE	MAX	OTHERS
4/1-4/10			240.0							
4/11	x	x		18.0	6.0	1.0 ⁽¹⁾	2	II b-1	0.5	0.5
4/12 - 4/30*				456.0						

* Bravo Status

(1) Underway time within 3-mile limit split in half.

Sheet 12 of 15

TIME INTERVALS (Hours)	SCORING CHARACTERISTICS (Estimates)		
	HOLDING TIME INTERVALS (1/2 hr)	TYPE	MAX
0.0 - 0.5			
0.5 - 1.0			
1.0 - 1.5			
1.5 - 2.0			
2.0 - 2.5			
2.5 - 3.0			
3.0 - 3.5			
3.5 - 4.0			
4.0 - 4.5			
4.5 - 5.0			
5.0 - 5.5			
5.5 - 6.0			
6.0 - 6.5			
6.5 - 7.0			
7.0 - 7.5			
7.5 - 8.0			
8.0 - 8.5			
8.5 - 9.0			
9.0 - 9.5			
9.5 - 10.0			
10.0 - 10.5			
10.5 - 11.0			
11.0 - 11.5			
11.5 - 12.0			
12.0 - 12.5			
12.5 - 13.0			
13.0 - 13.5			
13.5 - 14.0			
14.0 - 14.5			
14.5 - 15.0			
15.0 - 15.5			
15.5 - 16.0			
16.0 - 16.5			
16.5 - 17.0			
17.0 - 17.5			
17.5 - 18.0			
18.0 - 18.5			
18.5 - 19.0			
19.0 - 19.5			
19.5 - 20.0			
20.0 - 20.5			
20.5 - 21.0			
21.0 - 21.5			
21.5 - 22.0			
22.0 - 22.5			
22.5 - 23.0			
23.0 - 23.5			
23.5 - 24.0			
24.0 - 24.5			
24.5 - 25.0			
25.0 - 25.5			
25.5 - 26.0			
26.0 - 26.5			
26.5 - 27.0			
27.0 - 27.5			
27.5 - 28.0			
28.0 - 28.5			
28.5 - 29.0			
29.0 - 29.5			
29.5 - 30.0			
30.0 - 30.5			
30.5 - 31.0			
31.0 - 31.5			
31.5 - 32.0			
32.0 - 32.5			
32.5 - 33.0			
33.0 - 33.5			
33.5 - 34.0			
34.0 - 34.5			
34.5 - 35.0			
35.0 - 35.5			
35.5 - 36.0			
36.0 - 36.5			
36.5 - 37.0			
37.0 - 37.5			
37.5 - 38.0			
38.0 - 38.5			
38.5 - 39.0			
39.0 - 39.5			
39.5 - 40.0			
40.0 - 40.5			
40.5 - 41.0			
41.0 - 41.5			
41.5 - 42.0			
42.0 - 42.5			
42.5 - 43.0			
43.0 - 43.5			
43.5 - 44.0			
44.0 - 44.5			
44.5 - 45.0			
45.0 - 45.5			
45.5 - 46.0			
46.0 - 46.5			
46.5 - 47.0			
47.0 - 47.5			
47.5 - 48.0			
48.0 - 48.5			
48.5 - 49.0			
49.0 - 49.5			
49.5 - 50.0			
50.0 - 50.5			
50.5 - 51.0			
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66.5 - 67.0			
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67.5 - 68.0			
68.0 - 68.5			
68.5 - 69.0			
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69.5 - 70.0			
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71.0 - 71.5			
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74.0 - 74.5			
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76.0 - 76.5			
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77.0 - 77.5			
77.5 - 78.0			
78.0 - 78.5			
78.5 - 79.0			
79.0 - 79.5			
79.5 - 80.0			
80.0 - 80.5			
80.5 - 81.0			
81.0 - 81.5			
81.5 - 82.0			

DETAILED VESSEL MISSION PROFILE DATA

VESSEL POINT HERRON (82)

MAX 1974

DATE Month 5 Year 74	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home					
	Arrival	Departure					
5/1-5/14*			336.0				
5/15	x	x	17.0		7.0	1.0 ⁽¹⁾	2
5/16-5/18*			72.0				
5/19	x	x	13.0		11.0	1.0 ⁽¹⁾	2
5/20-5/21*			48.0				
5/22	x	x	21.0		3.0	3.0	0
5/23-5/26*			96.0				
5/27	x	x	21.0		3.0	1.0 ⁽¹⁾	2
5/28-5/29*			48.0				
5/30	x	x	21.0		3.0	3.0	0
5/31		x	19.0		5.0	3.0	1

Bravo Status

(1) Underway time within 3-mile limit split in half.

Sheet 13 of 15

SCOTT CHARACTERISTICS (Estimated)		TIME INTERVALS BEYOND RESTRICTED WATERS (Hours)	
TIME	HOLDING TIME INTERVALS (Hours)	MAX	OTHERS
		0.5	0.5
II b=1	0.5	0.5	6.0
II b=1	0.5	0.5	10.0
I	3.0		
II b=1	0.5	0.5	2.0
I	3.0		
II b=1	3.0	0.5	22.5
		

DETAILED VESSEL MISSION PROFILE DATA

JUNE 1974

Vessel POINT HERRON (P2')

DATE Month 6 Year 74	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home					HOURS UNDER- WAY WITHIN 3-MILE LIMIT	TIM	HOLDING TIME INTERVALS (Hours)
6/1	X		3.0		21.0	0.5	1	:	
6/2-6/12*			264.0						
6/13	X	X	18.0		6.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/14*			24.0						5.0
6/15	X	X	19.0		5.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/16-6/28*			312.0						4.0
6/29	X	X	14.0		10.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/30	X	X	13.0		11.0	1.0 ⁽¹⁾	2	II b=1	0.5
									10.0

* Bravo Status

(1) Underway time within 3-mile limit split in half.

Sheet 14 of 15

DATE Month 6 Year 74	DOCKINGS		HOURS IN HOME PORT	HOURS IN NON- HOME PORT	TOTAL HOURS UNDER- WAY	NUMBER OF 3-MILE CROSSINGS	SORTIE CHARACTERISTICS (Estimated)		
	Home	Non-Home					HOURS UNDER- WAY WITHIN 3-MILE LIMIT	TIM	HOLDING TIME INTERVALS (Hours)
6/1	X		3.0		21.0	0.5	1	:	
6/2-6/12*			264.0						
6/13	X	X	18.0		6.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/14*			24.0						5.0
6/15	X	X	19.0		5.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/16-6/28*			312.0						4.0
6/29	X	X	14.0		10.0	1.0 ⁽¹⁾	2	II b=1	0.5
6/30	X	X	13.0		11.0	1.0 ⁽¹⁾	2	II b=1	0.5
									10.0

DETAILED VESSEL MISSION PROFILE DATA

VEGAS POINT MERRON (P2')

July 1974

DATE	DOCKINGS		HOURS IN HOME PORT	TOTAL HOURS UNDER- WAY	HOURS UNDER- WAY WITHIN 3-MILE LIMIT	NUMBER OF 3-MILE CROSSINGS
	Home	Non-Home				
March 7 <u>Year 74</u>						
7/1-7/10*			240.0			
7/11	x	x	17.0	7.0	1.0 ⁽¹⁾	2
7/12*			24.0			
7/13	x	x	11.0	13.0	1.0 ⁽¹⁾	2
7/14	x	x	16.0	8.0	1.0 ⁽¹⁾	2
7/15	x	x	20.0	4.0	1.5 ⁽¹⁾	2
7/16	x	x	20.0	4.0	1.5 ⁽¹⁾	2
7/17-7/21*			120.0			
7/22	x	x	20.0	4.0	2.0 ⁽¹⁾	2
7/23-7/31	x ⁽²⁾	x ⁽²⁾		216.0 ⁽²⁾		

Bravo Status

(1) Underway time within 3-mile limit split in half.
 (2) Refurbishment in Yard-Use Municipal Sewage Sys

Sheet 15 of 15

SOIL CHARACTERISTICS (Estimated)		TIME INTERVALS	
TYPE	HOLDING TIME INTERVALS (Hours)	BEYOND RESTRICTED WATER (Hours)	
		MAX	OTHERS
II b=1	0.5	0.5	6.0
II b=1	0.5	0.5	12.0
II b=1	0.5	0.5	7.0
III d=1	21.5	0.75, 0.75	2.5, 2.5
II b=1	1.0	1.0	2.0

DETAILED SORTIE CHARACTERISTICS (ESTIMATED)

Vessel POINT HERRON (82')

Sheet 1 of 4

5/26/73	3 Mile HP --- 2.4 D 3.2 HP --- 2.4 D 3.2	7/7/73 HPL --- 0.5 D 13.0 HP --- 0.5 D 13.0
5/27/73	3 Mile HP --- 0.5 D 7.0 HP --- 0.5 D 7.0	7/8/73 HPL --- 0.5 D 12.0 HP --- 0.5 D 12.0
6/2/73	3 Mile HP --- .5 D 10.0 HP --- .5 D 10.0	7/17/73 HPL --- 0.5 D 3.0 HP --- 0.5 D 3.0
6/3/73	3 Mile HP --- .5 D 11.0 HP --- .5 D 11.0	7/18/73 HPL --- 0.5 D 5.0 HP --- 0.5 D 5.0
6/5/73	3 Mile HP --- .5 D 6.0 HP --- .5 D 6.0	7/22/73 HPL --- 0.5 D 13.0 HP --- 0.5 D 13.0
6/6/73-6/7/73	3 Mile HP --- 0.5 D 2.5 } 15.0 HP --- 0.5 D 12.5 }	7/30/73 HPL --- 0.5 D 5.0 HP --- 0.5 D 5.0
7/1/73	3 Mile HP --- 0.5 D 13.5 HP --- 0.5 D 13.5	8/4/73 HP --- 0.5 D 4.0 1.0 --- 4.0 1.0 --- 4.0 HP --- 0.5 D 4.0
7/2/73	3 Mile HP --- 0.5 D 5.0 HP --- 0.5 D 5.0	

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel) POINT HERRON (82')

Sheet 2 of 4

8/5/73	3 Mile HP — 0.5 —————— 3.0 1.0 1.0 1.0 1.0 1.0 1.0 HP — 0.5 —————— 3.0	9/20/73 3 Mile HP — 0.5 —————— 6.0 HP — 0.5 —————— 6.0
8/15/73	3 Mile HP — 0.5 —————— 3.0 HP — 0.5 —————— 3.0	9/22/73 3 Mile HP — 0.5 —————— 8.0 HP — 0.5 —————— 8.0
8/18/73	3 Mile HP — 0.5 —————— 14.0 HP — 0.5 —————— 14.0	9/23/73 3 Mile HP — 6.0 —————— HP — 6.0 ——————
8/19/73	3 Mile HP — 0.5 —————— 15.0 HP — 0.5 —————— 15.0	9/24/73-9/27/73 NHP 3 Mile HP — 1.5 —————— 1.5 HP — 3.0 —————— 7.0 96
8/30/73	3 Mile HP — 0.5 —————— 7.0 HP — 0.5 —————— 7.0	10/5/73 3 Mile HP — 0.5 —————— 2.0 HP — 0.5 —————— 2.0
9/3/73	3 Mile HP — 0.5 —————— 10.0 HP — 0.5 —————— 10.0	10/24/73 3 Mile HP — 0.5 —————— 3.0 HP — 0.5 —————— 3.0
9/6/73	3 Mile HP — 0.5 —————— 2.0 HP — 0.5 —————— 2.0	11/5/73 3 Mile HP — 1.0 —————— 7.0 HP — 1.0 —————— 7.0
		11/12/73 3 Mile HP — 1.0 —————— 2.0 HP — 1.0 —————— 2.0

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel POINT HERRON (82')

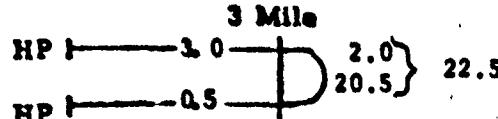
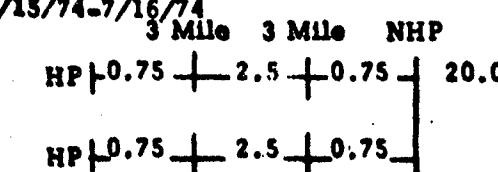
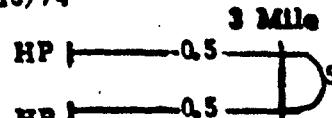
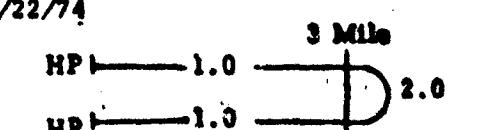
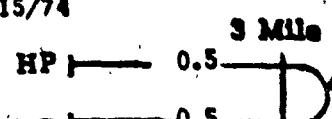
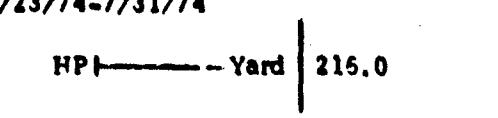
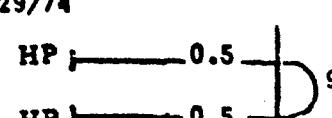
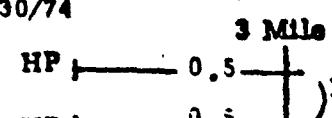
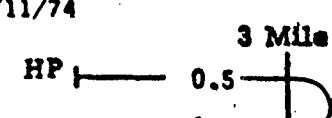
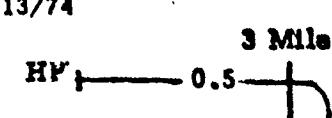
Page 3 of 4

11/13/73-11/28/73	2/18/74
 HP	 HPL — 0.5 — 3 Miles — 9.0
 HP — 1.0 — 3 Miles — 1.0	 HP — 1.0 — 3 Miles
 HP — 0.5 — 3 Miles — 3.0	 HP — 0.5 — 3 Miles — 5.0
 HP — 0.5 — 3 Miles — 1.0	 HP — 0.5 — 3 Miles — 6.0
 HP — 0.5 — 3 Miles — 2.0	 HP — 0.5 — 3 Miles — 10.0
 HP — 0.5 — 3 Miles — 5.0	 HP — 3.0 — 3 Miles
 HP — 2.0 — 3 Miles	 HP — 0.5 — 3 Miles — 2.0
 HP — 0.5 — 3 Miles — 8.0	 HP — 3.0 — 3 Miles

DETAILED SORTIE CHARACTERISTICS (Estimated)

Vessel POINT HERRON (82')

Page 4 of 4

<p>5/31/74-6/1/74</p> 	<p>7/15/74-7/16/74</p> 
<p>6/13/74</p> 	<p>7/22/74</p> 
<p>6/15/74</p> 	<p>7/23/74-7/31/74</p> 
<p>6/29/74</p> 	
<p>6/30/74</p> 	
<p>7/11/74</p> 	
<p>7/13/74</p> 	
<p>7/14/74</p> 